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INTESTINAL PERFORATION IN TYPHOID FEVER.

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OMAHA.

According to Hugh M. Taylor, 50,000 to 75,000 deaths occur annually in the United States from typhoid fever. If this is correct, and if we accept Osler's statement that one-third of these deaths are due to intestinal perforation, we have, at the lowest estimate, 16,666 deaths annually in the United States due to typhoid perforation. Again, accepting the opinion of Osler, Finney and others who have had the most experience with this condition, that one-half of these lives might be saved by timely operation, we have a grand total of 8,333 persons annually whose lives might be saved by timely surgical intervention. The average age of those dying from typhoid fever is 28.8 years, the greater number being males, most of them the heads of families. If, by carrying out the ideal treatment, 8,333 persons in the most valuable period of life might be saved to their families and to the state every year, the subject assumes an importance not to be ignored.

Considering the rapid progress of abdominal surgery during the last fifteen years, the medical profession has been strangely apathetic in realizing the value of the surgical treatment of intestinal perforation occurring in the course of typhoid fever, first formally suggested by Prof. E. Leyden, an internist of Berlin, in 1884, almost twenty years ago. In 1887, Lucke of Germany and Bontecou of Troy, N. Y., each without the knowledge of the other's work, adopted Leyden's suggestion, but neither of their patients recovered. These were the first cases operated on in which the definite diagnosis of typhoid perforation was made before the operation, though the honor of the first successful case must be given to Mikulicz, who operated in 1884, the diagnosis of typhoid fever not being made until after the operation.

Why have surgeons as well as internists been so slow in employing operative measures for this emergency? In the first place, the widespread opinion that typhoid patients can not stand anesthetics or major-surgical operations, has been an important factor against the general adoption of this procedure. The best answer to a fancy is a fact. The great mass of the profession shook their heads, a few venturesome ones operated, and it was discovered that patients in the midst of typhoid do stand operation remarkably well, and as the time of the operation does not extend beyond twenty or thirty minutes, the deaths from shock are very few. Many of the subjects of perforation are in fairly good physical condition, since it seems to occur in the mild cases relatively as frequently as in the more severe, and is quite a common occurrence after convalescence is well established, being due many times, I believe, to too early increase in the diet.

Another circumstance which has contributed much to cast a doubt on the value of surgical intervention, has been the fact that a large proportion of the operations have been undertaken for general peritonitis—not for mere intestinal perforation. If we had continued to hold our appendicitis cases till general peritonitis was present before operating, the present low mortality for appendicitis would not have been reached. It is my opinion that symptomatology of typhoid perforation as given in our text-books is often much more nearly the symptomatology of general peritonitis than mere perforation. The whole trend of modern surgery in other lesions is to put out the incipient blaze before the general conflagration has begun. Shall we make an exception in typhoid perforations? Before the ideal results are reached, the rules made use of in other acute surgical diseases must obtain, and operations be done as a routine for typhoid perforation, not for general peritonitis.

When it is considered that a very large number of the operations thus far reported for typhoid fever have not been done until general peritonitis has been fully established, 50 per cent. of recovery does not seem unreasonable, if done before the advent of peritonitis. The latest statistics from Johns Hopkins give 41 per cent. of recoveries. There they are striving to operate for the perforation merely, but even there several cases are recorded with a fully developed peritonitis. Another point affecting the mortality is that a small per cent. of the patients dying after operation do not die from the operation or the perforation, but as a result of the general typhoid infection. Such cases should not be charged against the operation.

The length of time intervening between the perforation and the moment of operation will tell us much regarding the difference in the mortality between operations for mere perforation and for general peritonitis. Armstrong, in a paper before the Chicago Surgical Society in May, 1902, reports 33 cases of typhoid perforation operated on in Montreal; 10 were done within twelve hours after perforation, with 4 recoveries, 40 per cent.; 10 were done from twelve to twenty-four hours after perforation, with 1 recovery, 10 per cent.; 5 were done from twenty-four to sixty hours after perforation, with no recovery; 1 was done seven days after perforation, with recovery. The last consisted merely of opening a circumscribed abscess. Even the 20 cases in Montreal, operated on within twenty-four hours, with a mortality of 75 per cent., undoubtedly include a num-

ber of cases of general peritonitis, for, in many instances, peritonitis is developed within two to four hours after the moment of perforation.

The table made by Keen in 1900, showing the time of operation after perforation had occurred in the 158 cases recorded by him, seems to throw a doubt on the value of very early operation.

Under twelve hours, 29 died, 7 recovered, or 19.44 per cent.; twelve to twenty-four hours, 27 died, 12 recovered, or 30.76 per cent. Keen thinks the greater mortality during the first twelve hours is due to shock.

It occurs to me that this argument for operative delay is more apparent than real. In the first place, those who are very ill, in a stupor, are much less likely to show symptoms of perforation, and the first indication of the calamity is the advent of general peritonitis. It is more than probable that several among those operated on during the first twelve hours belonged to this class. It is also true that when the perforation is large and the fecal leakage extensive, serious symptoms develop immediately, and the earlier operation is likely to be done, the mortality in this class of cases being higher than among those with minute perforations and little or no extravasation of the bowel contents. Again, some patients are very susceptible to peritoneal irritation, and show marked symptoms from the first, these being very unfavorable subjects for operation. Still further, when for any reason, avoidable or unavoidable, the operation has been postponed, the patients very ill from the disease, those with very large perforations and those who succumb easily to peritoneal irritation, are likely to be moribund or nearly so after twelve hours, and die without an operation.

On the other hand, those operated on during the second twelve hours are likely to be the cases not so very ill from the disease—those with minute perforations and slight leakage or none at all—and those especially unsusceptible to peritoneal irritation. I am convinced that those operated on during the second twelve hours very largely included cases of this kind, and were in every way the better subjects for operation. Not for a moment do I believe that the mortality of Keen's 39 cases operated on from twelve to twenty-four hours after the perforation, would have been greater had they been operated on during the first twelve hours. On the contrary, I believe that several of those who died might have been saved.

The question of whether or not to operate during the existence of shock has been variously answered by different observers. As might be expected, Keen takes the view that the operation should be done "at the earliest possible moment, only waiting until the primary shock, if present, has passed away." Robert Abbe says: "Operations for perforation should be delayed until shock has passed, say within twelve to eighteen hours."

Most authorities I have been able to consult do not wait for shock to pass away, feeling it is better to run some risk from immediate death rather than a greater risk from a general peritonitis. Cushing says the only contraindication to the operation is a moribund condition of the patient. G. G. Davis states that operation should be done at once, even in collapse, rather than wait for severer collapse later on. Armstrong says that when shock is most pronounced is when a large perforation is present with much fecal leakage, and we should not wait for reaction. My own opinion is that if shock is prolonged beyond the time necessary to prepare for operation, the spreading infection of the peritoneum is more dangerous than the operation; that in cases of severe shock, if we wait for a favorable time for operation, we will not operate at all. I would rather operate for perforation without general peritonitis during shock, than for general peritonitis without shock. If we ever expect to reach ideal results in the treatment of typhoid perforation, we shall have to make a practice of operating at once, whether shock is present or not, having everything done possible by all known methods to counteract shock while we work, doing the operation in the shortest possible time and with the least possible amount of anesthetic.

DIAGNOSIS.

The diagnosis of intestinal perforation is not always as easy as the reading of our text-books would lead one to suppose. The keenest observers have failed to recognize it, and have operated for supposed perforation when no such condition existed. Many diagnoses of perforation have been made from the symptoms of general peritonitis, symptoms which might have led to the diagnosis of perforation several hours earlier having been disregarded. The symptoms of perforation are not always violent. Often they are so slight as not to give the alarm. The patient may complain to his nurse of abdominal pain, and be given a hypodermic of morphin, which masks the symptoms effectually until the advent of general peritonitis.

In my own limited experience, the most marked symptoms have been abdominal pain, localized tenderness, thoracic breathing and muscular rigidity. Sudden decline of temperature and the phenomena of shock have not been so constant.

Pain.—Sudden complaint of severe abdominal pain, which persists, should be considered a danger signal. The location of the pain is variable, but is most often manifest in the umbilical region. Sudden increase of pain which has been present as part of the disease is to be regarded as equally significant.

Tenderness.—Still more important is fixed local tenderness usually below the level of the umbilicus and oftenest to the right of the median line.

Thoracic Breathing.—Because of the pain, abdominal respiration is less marked than normally, and the respiration is of the thoracic type.

Muscular Rigidity.—The pain, tenderness and thoracic respiration were present in the three cases reported, but the muscular rigidity present in Case 1, extremely marked in Case 2, was so slight in Case 3 that I was in doubt about the diagnosis. It is, however, a sign of great value, and I believe it to be almost always present, greatest in the region of the perforation.

Shock.—Apparently this is not always present, though a subnormal temperature was observed in two of my cases, not noted in the other. I am convinced that if looked for at the proper time, a small reduction of temperature would be found in most cases. If the patient is not too ill, there is also a feeling of anxiety or impending calamity, often eloquently expressed in the countenance. Chill may or may not be present; also nausea and vomiting occasionally occur, though this is more often an ushering in of general peritonitis. The pulse, if there be much shock, becomes somewhat compressible, followed by an increase in rate.

Obliteration of Liver Dullness.—This is not a frequent phenomenon, and when it occurs may be due to other causes than free gas in the abdominal cavity, as the pushing up of the liver by coils of distended intestines.

Leucocytosis.—This is a sign on which little reliance can be placed. Sometimes it is present, sometimes

there is even a reduction in the number of leucocytes. Cabot, in "Clinical Examination of the Blood," says on this point: "It is probable that slight local peritonitis always produces leucocytosis unless the individual is already in a condition of profound general septicemia. On the other hand, a sudden (general) infection of the peritoneum with large quantities of excessively malignant organisms may often result in complete absence of leucocytosis, or a relatively slight rise, followed later by a fall." I think we must conclude with Harte that "the leucocyte count has proven of very little value at the time most needed."

Blood Pressure.—George W. Crile is of the opinion that a sudden rise in blood pressure is an indication of typhoid perforation. In four cases this fact was verified by operation or autopsy. If verified by more extensive observation, this may prove a valuable sign in cases of difficult diagnosis.

Red blood count and estimate of hemoglobin in case differentiation between perforation and hemorrhage is difficult. would doubtless be of much value, as pointed out by Briggs.

The preceding signs and symptoms are many of them present in perforation. The symptoms of the consecutive peritonitis are the usual symptoms of general peritonitis, whatever be its cause, and need not be considered here.

TREATMENT.

How can the ideal method of treatment, early operation for intestinal perforation before general peritonitis comes on, be realized? If every physician, whenever he has a case of typhoid fever, were to keep constantly in mind the possibility of perforation and be prepared for its prompt surgical treatment, a long stride in advance would be accomplished.

The duty of a surgeon, when called to such a case, is, first, to be prompt. If the diagnosis of perforation is fairly certain, immediate operation should be done. The family should be informed of the condition of affairs in a way to convince, and the necessity of avoiding delay should be insisted on. Transportation to a hospital is likely to increase the leakage and disseminate infection. Therefore, the operation should be done in the house where the perforation occurs.

There is another class of cases in which absolute diagnosis of perforation is impossible. The line of procedure in such a case is not so positive. Even here the dictum of Cushing, "when reasonably in doubt, explore," is the safest rule to follow. In doubtful cases, Osler believes in giving the patient the benefit of the doubt and operating. Richardson expresses the opinion that operation should be done "when the perforation is suspected rather than demonstrated." Several operations have already been done and no perforation found, no ill consequences resulting. The symptoms in some of these cases have been demonstrated to be peritoneal irritation or infection from an ulcer about to perforate, and several observers, notably Finney, Cushing, Keen and Briggs, have attempted to formulate the symptoms of this so-called pre-perforative stage, with the view of anticipating perforation by operation. Although not denying that in rare cases such refinement in diagnosis may be reached, I believe that usually it will prove chimerical. Peritonitis may arise without perforation, just as a perforation of the appendix is unnecessary to produce a local or even a general peritonitis, but to call this a pre-perforative stage is not correct and not borne out by the facts, for perforation might never occur in such a condition. Operation for a non-perforative peritonitis is undoubtedly good practice. I only object to the use of the term "pre-perforative stage."

When the surgeon calls and finds general peritonitis already developed, it is unquestionably his duty, if patient is not moribund, to operate, for some of these cases can be saved by this means. Murphy has reported 6 successive cases of general suppurative peritonitis, one of them due to typhoid perforation, all of them recovering after operation. Although our duty is clear to do all in our power to save the cases of general peritonitis by the most radical procedure called for, these cases should not be classed as deaths from typhoid perforation. Our whole effort may reasonably be directed to anticipating the general peritonitis by operation for the perforation before infection begins.

The technic of operation is not a fruitful subject for discussion. There seems little disagreement in regard to technic, all the trouble seeming to arise from the lateness in which the procedure is made use of.

The best incision is doubtless along the right semilunaris or through the outer border of the right rectus muscle. The cecum and appendix are first found and inspected, and then careful search is made along the lower three feet of the ileum where the perforation, if present, is found in most instances. The next most likely place to find the perforation is in the sigmoid flexure. The size of the perforation varies from a pin point to a ragged hole encompassing half the circumference of the ileum, as in my second case. In about 35 per cent. of the cases, the perforation is single.

To close the perforation, fine silk is used, with a Halstead mattress suture or a running suture, the direction in which the stitch is passed being parallel with the bowel so as to encroach as little as possible on the lumen. No paring of the edges of the opening is called for, simply infolding being sufficient. If several perforations are present—crowded together—I doubt whether resection is ever justifiable, this being too formidable an operation for the patient to bear. In such a case the loop may be pulled up into the wound and an artificial anus established, or gauze may be packed about the loop containing the perforation and complete sequestration of the point of leakage made from the rest of the abdominal cavity.

Enterostomy has been formally proposed as a substitute for suture of the perforation, and the results in the few cases reported by this method are so favorable that it deserves further investigation. Escher of the Trieste City Hospital, in Austria, reports four operations made by this method, with three recoveries, and has collected ten other cases treated by enterostomy, with four recoveries. This makes fourteen operations with seven recoveries, the ideal result we are striving to reach. Where much gas is present especially, this procedure would look promising, quickly doing away with the excess of gas. The artificial opening can later be remedied by a simple operation.

After disposing of the perforation, the extravasated bowel contents must be removed from the peritoneal cavity. If only a slight amount is present, and localized near the perforation, I would use no irrigation, fearing to spread the infective material broadcast through the abdomen. In this condition, careful wiping out of the fecal matter will suffice. On the other hand, where the leakage has been extensive and has become scattered, copious irrigations with normal salt solution are most effective, directing the point of the irrigator to all

parts of the cavity, giving especial care to the pelvis and flanks. When all seems clear, thorough drainage tubes and large cigarette drains are used, here also being careful that the pelvis and flanks are thoroughly drained. There may be cases where drainage is not required, but it can scarcely be dispensed with unless the amount of leakage has been practically *nil* and the operation has been done at a very early hour.

The operation should be carried out as expeditiously as possible, bearing in mind that the patient is in no condition to endure a prolonged operation. Every effort should be made to overcome shock, if already present, or to avoid it.

Much has been said regarding local anesthesia in these cases, but I doubt the wisdom of operating without a general anesthetic. The shock from the pain and nervousness and fright will, in most cases, be greater than the shock from a general anesthetic. Furthermore, under local anesthesia, the operation takes longer and is not likely to be as thorough.

My own choice in this matter is to use ether by the drop method, make the incision and search for the perforation quickly, and as soon as the perforation or perforations are found, stop the anesthetic, the closure of the perforation and the peritoneal toilette giving very little pain, and usually they will be completed before the patient regains much sensitiveness.

I shall not consume your time by a consideration of the treatment of general peritonitis due to perforation, since the same conditions hold here as in peritonitis due to other causes.

CASE 1.—Male, aged 17 years, in the third week of typhoid fever, three other members of his family being down with typical typhoid, was brought to Immanuel Hospital from his home in Florence, Neb., June 29, 1895, with a history of having been progressing favorably till two days before, when he was suddenly seized with intense pain in the right lower abdomen, which had continued since that time, abdominal distention increasing.

Condition on admission: Temperature, 103.5; pulse, 140; thoracic breathing and great abdominal distention. Tenderness everywhere, but greatest in right lower quadrant. Immediate operation. Incision in right semilunaris. General suppurative peritonitis present with a large perforation of the appendix. Appendix removed, there being few adhesions, abdominal cavity thoroughly flushed and drained with gauze and rubber drainage tubes. Ether anesthesia. Patient apparently rallied fairly well, but in a few hours began to fail, and died twenty-four hours after the operation.

The appendix was submitted to Dr. W. R. Lavender, professor of pathology in Omaha Medical College, who stated that he found the bacillus typhosis and pronounced it a true typhoidal perforation, due to ulceration of a solitary follicle.

CASE 2.—Male, aged 22. At 4 a. m., Nov. 7, 1902, I reached a farm house four miles from Central City, Neb., where I had been summoned by the Drs. Benton to see a case of intestinal perforation occurring early in the third week of typhoid fever. He had been very ill, but with no alarming symptoms till 2 a. m., November 6, when a sudden intense pain occurred just below the umbilicus, which persisted, and Dr. J. E. Benton was called. He found the temperature 97 F., pulse 110, abdominal tenderness marked just below umbilicus and to the right of the median line. Considerable rigidity of the right rectus muscle. Not improving by afternoon, I was summoned.

Condition at time of my visit: Temperature, 102; pulse, 112; the most intense rigidity of abdominal muscles it has ever been my fortune to observe. Abdominal respiration seemed entirely suspended, his respiration being of the thoracic type. Still complaining of pain, but not so intense. General abdominal tenderness, but most intense near the McBurney point. His countenance did not have the expression of such acute illness as would be expected from his other symptoms.

Operation was immediate, by incision through the outer border of the right rectus muscle. Large quantities of fecal material were free in the abdominal cavity. A large perforation was found in the ileum about two feet from the ileocecal valve. It was very ragged and large enough for one to have inserted two fingers, and included one-half the circumference of the bowel. By a hasty suture the leak was closed. Next a large quantity of normal salt solution was used for irrigation. It was estimated that a quart of feces was washed out of the pelvis. General peritonitis was present. Thorough drainage used. Returned to bed apparently none the worse from the operation, but he sank and died twenty-four hours after the operation. No leucocyte count was made.

CASE 3.—Male, 19 years. Was seen at the South Omaha Hospital in consultation with Dr. Curtis, Dec. 15, 1902. The young man had been ill with typhoid fever, as nearly as could be estimated, about two weeks. December 12 he had had an intestinal hemorrhage, which had depressed him greatly. A few hours after the hemorrhage a blood count had been made, showing 9,000 leucocytes. After the hemorrhage he progressed fairly well, the temperature ranging from 101 to 103.5 degrees till about 7 a. m., December 15, when he complained of abdominal pain, but not so marked as in Cases 1 and 2. His temperature dropped to 97.4 degrees just after the complaint of pain, but rapidly rose again.

When seen by me, about eight hours after the symptoms of abdominal pain began, his temperature was 102 degrees, pulse soft and 116 per minute. Respiration not hurried, slight abdominal distention, almost no rigidity of the abdomen, some tenderness in right lower quadrant, but not marked. Leucocyte count showed 11,000; no vomiting. Considering the absence of abdominal rigidity, the slight amount of pain and tenderness, and the history of the previous hemorrhage, I could not feel fully convinced that a perforation was present. No operation was done.

Gradual increase in pulse rate and death occurred thirty-six hours after the onset of the abdominal pain. An incomplete autopsy showed a perforation approximately thirty-six inches from the ileocecal valve.

In this case I think that frequent estimation of the hemoglobin and a red blood cell count might have been of material value, differentiating between intestinal perforation and hemorrhage.

THE OPERATIVE TREATMENT OF ECLAMPSIA

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In threatened eclampsia before the outbreak of convulsions operative interference is sometimes necessary. The indications for such interference may be either maternal or fetal. If in the later months of pregnancy well-known symptoms of intoxication occur that arise from the pathologic condition characteristic of eclampsia, and if these symptoms persist in spite of diet and the use of eliminants like purgatives and diaphoretics and other appropriate treatment, the termination of pregnancy may become necessary. While not entering into a discussion of this indication more in detail, I will say that it should receive greater attention than is ordinarily given it. I do not believe that the emptying of the uterus is often required, for I think that radical appropriate treatment, and most important of all, rest in bed, will generally tide the patient over the dangerous period, yet certain cases will arise, especially when the eyes are involved or when there is much distension of the uterus, where operation will be the only way to prevent convulsions.

It is well established that the fetus often suffers from

an eclamptogenic intoxication. Pathologic anatomic changes occur in the liver, kidney, brain, etc., similar to those found in the mother. This is probably the reason why there is such a large number of stillbirths from eclamptic mothers, and why so many children die during the first days of life. It might seem reasonable to hope that a child removed at thirty-five to thirty-six weeks would be in better condition than one exposed longer to deleterious influences of the maternal poison. Moreover, if a child could be safely removed at this time it might escape the danger of a hasty operative delivery. This consideration, while not furnishing an independent indication for labor, may be of supplementary value in making a decision when the condition of the mother is such as to excite apprehension.

If termination of pregnancy is decided on, two methods should be considered: (*a*) the induction of labor, and (*b*) the removal of the child by cesarean section.

The principle that should determine the method of inducing labor for threatened eclampsia is to choose the operation that will least disturb the patient. It is not unlikely that the disturbance of labor is frequently the immediate exciting cause that brings on a convulsion. Hence one should avoid any operation that might have the effect of a prolonged and severe labor.

In accordance with this rule in cases of hydramnion, twins or other conditions where the patient suffers on account of abdominal distension, one would bring on labor by rupturing the membranes. In other cases the Krause method of using a bougie, if properly employed, is efficient, safe, reasonably prompt and causes no more disturbance than normal labor. The bag or manual dilatation of the cervix is not often needed, and while by its use labor can be completed in much shorter time, it disturbs the patient much more and requires sometimes long-continued anesthesia.

The proposition to remove the child in these cases by opening the uterus is a new one, but one that promises several interesting advantages over the induction of labor in certain cases. The danger of convulsions occurring during induced labor is avoided. Other dangers not as yet fully recognized, like the production of organic lesions of the liver and kidneys and myocardium, are present in case of any labor in an eclamptic woman. These would be avoided also by such an operation. Moreover, the chances of the child are, of course, improved in this way.

An abdominal cesarean section would be employed in case of some obstruction in the pelvic obstetrical passage, like contracted pelvis, etc. Otherwise the new operation of vaginal cesarean section would be performed, because it is attended with less shock and leaves no external scar.

I have recently reported a case of this kind that well illustrates the points just made. In brief, the case was as follows: The patient had severe convulsions in her first labor, which led to the birth of a dead child. Four years later, during the latter half of her second pregnancy, symptoms of severe eclamptogenic intoxication appeared. In spite of rigorous treatment, the albumin increased to 35 per cent. by examination with the centrifuge, headache became very severe and vision very greatly impaired. I had hoped to carry the pregnancy to the thirty-fifth week on account of the child, but the appearance of the eye symptoms and the urgent advice of the consulting ophthalmologist who represented that continuance of pregnancy involved great risk of permanent loss of vision, led both Dr. Frank B. Earle, who was associated with me in the case, and myself to decide on interference in the thirty-first week. For reasons given above, vaginal cesarean section was chosen, and the child delivered in fair condition. Although it was placed in an incubator and well cared for, it lived only about forty hours. The condition of the mother began to improve a few days after the operation, and at the end of two months she was in a fair state of health.

After the occurrence of convulsions, rapid operative delivery is indicated when possible, i. e., when it does not in itself involve greater danger than that presented by the eclamptic condition. While in perhaps one-third of all antepartum or intrapartum cases convulsions do not cease immediately after delivery, and in 20 to 25 per cent. of all cases they first appear in the puerperium, yet as the disease is due to the connection of the egg with the maternal organism, it is desirable to separate it as soon as possible. It is also true that in hospitals where active interference has been instituted the mortality from this affection has diminished. In other words, the clinical results prove that proper interference is beneficial. Moreover, the hope of saving the child may have some influence in deciding on the operation.

In order to achieve the hoped-for results from operative interference, it is necessary that the best facilities for performing such operation be secured.

For any of the operations included under the term accouchement forcé, it is necessary that the operator have a table, good light, necessary instruments, assistants, aseptic preparation and the requisite skill. All these essential conditions can be obtained much better in a hospital, and it is therefore desirable to secure the advantages of a hospital whenever possible. The danger of transporting a patient two or three miles is not to be overlooked, but it is more than counterbalanced by the facilities for good work.

The contraindications to operation, when the patient is not moribund, is found in the absence of or impossibility to secure the necessary facilities. It is safer to combat the dangerous symptoms with morphin and promote elimination by purgatives and sweating and perhaps bleeding, than to attempt dangerous operations with an uneffaced and undilated cervix without proper conditions.

All operations should be made under complete anesthesia. The good results now obtained from active operative therapeutics are due in great part to the general observance of this rule. Without anesthesia painful manipulations are apt to bring on convulsions, and in any event the struggles of the patient and the shock to which she is exposed have a deleterious effect on her strength, and especially on the already overburdened and weakened heart. Before the general use of anesthesia in these cases, operation often hastened the fatal issue, and so came into disrepute, from which they have only emerged within the last ten to fifteen years.

The choice of the anesthetic is in dispute. I believe that ether is preferable to chloroform. Some give preference to chloroform, because in eclampsia, where there is almost always kidney disease, they believe chloroform less injurious. The statement that ether is more dangerous than chloroform in kidney disease has been passed along from one writer to another, but as in many similar instances, very few have taken pains to confirm it by personal experiment or careful and sufficient study. Lately a number who have studied the subject have come to doubt the statement, and I believe it should not be given much, if any, weight. On the other hand,

the much greater safety of ether in case of heartstrain and exhaustion makes it especially indicated in eclamptic cases. Lesions of the myocardium are found very frequently in postmortem examination of patients dying from the disease, and may be considered one of its characteristic pathologic changes. This diseased heart is put to greatly increased strain during a convulsion. It is evident that the anesthetic that works the least harm to the heart should be chosen for an operation, and I feel confident that ether will always serve us best.

The remarks concerning an anesthetic apply only to that used for operation and not to an anesthetic to control convulsions. I believe that anesthetics have no place here; that morphin is much safer, and that the frequent, long-continued use of chloroform for this purpose is very bad practice.

To consider now the operative means to be employed in different conditions antepartum and intrapartum, we may begin with that condition about which there is no difference of opinion, namely, when the cervix is completely dilated. Here all are agreed that the child should be delivered immediately, or as soon as the patient can be anesthetized and preparations made for the operation. In case of head presentation forceps will be used and in a breech manual extraction will be employed. If there be obstruction in the passage due to contracted pelvis or a tumor, or if the passenger be abnormally large or deformed, the case will be managed in accordance with the rules that apply to the management of dystocia.

When the cervix is effaced, but only slightly or partially dilated, we have a condition where our facilities for work may influence our procedure. We have the three methods of dilatation—incision, digital and bag dilatation. The first is accomplished in a moment and allows immediate extraction. It, however, requires good assistance for its proper execution and for the repairs that are quite likely to be needed. Hence it should only be attempted in a hospital or where equally good conditions can be secured.

All preparations for the operation, for repairs and for control of hemorrhage having been made, the patient is placed anesthetized on a table in a good light and large retractors inserted in the vagina to expose the cervix. The posterior lip is first caught with two artery or vulsellum forceps each side of the median line, and then cut through to the vaginal junction with long angular scissors. The anterior lip is then held and incised in the same way. This prepares the cervix for forceps or turning and extraction. The greatest danger is due to the unprepared state of the vagina, which, in primiparæ, is apt to be badly torn during the forcible delivery. If this danger can be minimized or the injury well repaired, this operation may promise the best results for mother and child.

Where assistants and other facilities are lacking, we must rely on digital dilatation or metreurysis, or both combined. For these operations the patient should also be anesthetized, shaved and cleaned and placed on the table. Digital dilatation may be effected by using the fingers of one hand according to the method of Harris or by the fingers of both hands, according to the Edgar method. In the first case the hand is very carefully sterilized and perhaps covered with a glove, and the half hand introduced into the vagina. The forefinger is then pushed through the os. It may be necessary to make a preliminary dilatation with a branch dilator. The forefinger is withdrawn to its tip and the second finger inserted along beside it. After these are carried through the os the distance of one to two inches they are separated as far as possible. They are then withdrawn and the third finger added to the other two. After separation and dilatation, as before, the fourth finger is added and dilatation completed as far as possible. Then the whole hand is carried into the vagina, and the thumb with the fingers pushed through the os to the metacarpophalangeal articulations and the fist closed. The average fist measures about 27 cm. in circumference, which is about three-fourths of the circumference of the average fetal head.

By the Edgar method, after introducing the forefinger of one hand the corresponding finger of the other hand is inserted and the os pulled open as in dilating the sphincter ani in an operation for hemorrhoids. Later two or more fingers of each hand may be used in the same way.

By neither of these methods is the cervix opened completely as in normal labor. The tissue is not pulled up into the lower uterine segment, and a rim remains that is liable to tear during extraction. However, if one can take time to complete the dilatation as well as possible, extraction may be made without great risk. The time required will vary greatly, depending on the amount of the spontaneous dilatation that exists at the beginning and the thickness and distensibility of the cervical tissue. In favorable cases one may succeed in fifteen to thirty minutes, while frequently one to two hours or more may be required.

The metreurynter or uterine bag opens the cervix in a way more nearly approaching the normal, but its use requires the help of one more assistant. The conical, inelastic, vulcanized bags of Voorhees are most to be recommended. With the patient in position as before described, the cervix is seized with a vulsellum forceps, which is held in the left hand. The right half hand is then introduced into the vagina, the forefinger carried through the os and the membranes ruptured. Then the empty folded bag is pushed through the os with the finger and held in place with the finger in the vagina until it is filled with sterile water by means of a bulb or fountain syringe. The hand is then withdrawn and the tube clamped or tied. Some traction is now made on the tube until the bag is pulled through the os. A larger bag with a circumference at the base of 28 to 30 cm. is then introduced and used in the same way. This method generally takes considerably longer than the other, and it may be desirable to let the patient come partly or entirely out from under the influence of the drug during its use.

Recently a strong, powerful metal dilator, operated by a screw, invented by Bossi, has been considerably used in Europe and very rarely in America. Numerous reports of severe and serious tears have shown this instrument to be dangerous and not to be recommended.

After dilatation, or during dilatation if it lasts very long and if the condition of the patient allows, it may be well to let her come out of the ether in order that the child may descend into the pelvis, and if possible be expelled spontaneously. Generally it is to be extracted by forceps or by version and extraction as soon as dilatation is effected. Of course if the child is dead craniotomy should be done.

When the cervix is not yet effaced, either before or at the beginning of labor, the problem of management is more difficult. Cervical incisions are not sufficient,

and sufficient manual dilatation or metreurysis will generally require many hours.

Such long-continued manipulation is dangerous, both on account of the anesthetic and the risks of infection and shock.

If the patient be in a hospital and if the physician possess the necessary skill the vaginal cesarean section will probably procure the best results. It is much safer than an attempt to extract through a partially dilated cervix, the old accouchement forcé. The patient properly prepared is placed on the table and the cervix grasped anteriorly by vulsellum forceps, one each side of the middle, which are then substituted by traction sutures. A longitudinal incision is then made from a short distance behind the meatus urinaris to the external os through the vaginal mucous membrane. The bladder is then separated from the cervix by means of gauze sponges, the loose tissues between the bladder and uterus yielding easily. The cervix is then cut through on the medium line with scissors. As the incision extends upward the edges are caught by vulsellum forceps, on which traction is made to bring more and more of the anterior wall of the uterus within reach. This is split through, the vesico-uterine fold of the peritoneum being pushed up. In this way an opening may be made large enough to admit easily the closed fist through which the head may be extracted. If the child be at term it may be well to split the posterior wall of the cervix. An incision is made in the posterior vaginal wall, the rectum separated and the cervix incised in the same way as the operation was done on the anterior wall. Sometimes it may be necessary, in order to get more room for extraction, to make cross incisions in the vaginal wall. Unless the head is in the pelvis delivery is accomplished best by version and extraction. After the birth of the child it is not necessary to deliver the placenta at once. This might lead to considerable and unnecessary hemorrhage and probably require packing of the uterus. If there has been no detachment of the placenta and no hemorrhage from the placental site, the cord should be cut short and pushed back with any protruding membrane by a sponge and the repair of the incisions begun. The edges of the uterine wound are caught with forceps as before and pulled down until the upper angle of the wound is in plain view. Then with a well-curved needle and strong catgut the wound is closed with interrupted sutures knotted on the inside of the uterus. Before the lower part of the cervix is repaired the placenta must be expressed and any hemorrhage checked by hot uterine injections. The vaginal incisions are closed in the usual way.

If the operation just described is impossible we must choose between giving all of our attention to securing elimination and controlling dangerous symptoms or cautiously assisting labor while attending to the general condition. If the patient is not overwhelmed with the eclamptic poison, if the convulsions are few, the coma not profound and the heart in good condition, the first may be the best plan to pursue. Morphin hypodermically in one-sixth to one-fourth grain doses up to three-fourths grain, is the most reliable agent to control convulsions. Profuse sweating by packing or hot air should be secured. Two to four drops of croton oil placed on the tongue will secure free and prompt purgation.

Bleeding from the arm will rarely be required, but in desperate cases should be resorted to. The subcutaneous injection of one to two pints of normal salt solution will often have a favorable effect. Oxygen should always be used to relieve the overburdened heart.

In connection with these measures, when the symptoms are more urgent, we may induce labor or slowly dilate the cervix. As before stated, rapid dilatation and extraction in these cases is impossible, and any attempt in this direction is apt to lead to great disaster. The proper way to proceed is to anesthetize and prepare the patient, dilate the cervix with a branch or solid dilator to admit one finger, rupture the membranes and introduce a small Voorhees bag. Then ether should be withdrawn and the patient put back in bed. With careful control of symptoms and care for elimination as outlined above the labor should be allowed to progress until the bag is expelled. Then if necessary the anesthetic should be given again and another bag inserted, and again labor be allowed to proceed as before. Finally, after the cervix is well dilated, or after the effacement is complete and more active dilatation is safe, more active measures may be taken to deliver the child.

THE USE AND ABUSE OF HYPNOTICS.*

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"Take a trional powder when you retire and you will not be troubled with insomnia." This is a too common advice given to the laity and patients when either time or lack of interest prevents a thorough examination for the cause of the insomnia. Before falling into the rut of routine hypnotics, it is well to take more time to study every case of insomnia and ferret out the cause, remove it if possible, and little sleep-giving medicine will be needed. It should be remembered that insomnia is a condition or symptom dependent on some disturbing influence in or out of the body. Why give a hypnotic if acute indigestion is the cause; if high or moderate fever is present; if there is an earache, toothache or severe neuralgia; if a brass band is playing next door; if some unusual noise is disturbing? Do we always stop to consider and inquire into these and many other possibilities before we prescribe?

One gentleman who had undergone treatment at the hands of many admitted that no one had given his case a close study, but all jumped to the same conclusion, and had about exhausted the list of narcotic and hypnotic remedies. He was on the verge of a complete nervous breakdown. His constant symptoms were dizziness and a continued buzzing sound referable to the frontal region. Examination revealed errors in dietetics and an impacted auditory canal—the accumulated and hardened serous and waxy discharge impinged on a perforated and inflamed membrana tympani. Do I need ask why hypnotics failed here? Simple dietetic rules and proper treatment soon brought relief, but not at once, because Nature is a great creature of habit, and insomnia once fixed is sometimes very hard to eradicate. We may remove the cause of insomnia or neurasthenia in cases of long standing, but the effects will linger for days and even months before a return to normal is probable. Better nights will come by degrees until Nature reasserts herself. Unhappy is the man who, burdened with debts, business cares, unpleasant home relations and indigestion, retires to his bed night after night

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to toss and roll in a broken, dreamy and unsatisfactory few hours' sleep! Will we give him his sleeping potion, gradually increased, until he becomes a complete wreck and finally lands in an asylum or commits suicide?

How about the broker on the exchange? The man who works eighteen and twenty hours out of the twenty-four? The professional gambler? The man who is constantly using liquors to excess but not to intoxication? Shall we give these hypnotics? At an hour when sleep is most needful, should we give a narcotic or hypnotic to a crying child to induce sleep? Is it a case of earache, indigestion, too much or too little cover, fear, fever, night terrors, or some other condition? These are a few of the possible conditions that may be slighted and the hypnotic given as a matter of routine.

We should never overlook the fact that a close, warm and poorly ventilated room is often the cause of insomnia and disturbed sleep. It is a bad policy to sleep in a room with a burning light or gas jet, as a poor hypnotic effect is realized. The practice of inducing sleep by the inhalation of chloroform, ether and benzine can not be too strongly condemned. It is dangerous and injurious, and soon becomes a fixed habit. Hypnotic suggestion is often valuable. Gentle stroking massage of the forehead and neck will often induce sleep. Many persons will lie awake for hours, but if a cup of warm milk or bouillon is taken on retiring, Nature is soothed and sleep comes. Conversation, argument, games of chance, light reading and brain work should be avoided immediately preceding retiring, as these induce wakefulness. Many patients come with the tale of no sleep even for one hour, for one, two and three weeks at a time. While it is unnecessary, inadvisable and useless to question their veracity and to argue with them, we should accept their statement *cum grano salis,* and be governed accordingly. Such patients find considerable broken rest every twenty-four hours (there may be an occasional exception), and instead of prescribing strong hypnotics, we should seek for the possible causes, treat them and be absolutely positive in assuring results. This class of invalids should never be deceived, for the least-discovered deception will prevent the accomplishment of good. Some will occasionally need hypnotics, while others will benefit from a placebo. Mild massage, warm baths and warm-oil rubs at bedtime are often good sleep producers.

Many neurasthenics and overworked people drink a glass of beer or take a small drink of whiskey at bedtime to induce sleep. It works well in most cases, but as time passes the small drink has grown to be a glassful, and often one-quarter to one-half pint of whiskey. Sleep will not come without it. Such sleep is not restful, and the toxic effects of alcohol are produced next day—nervousness, irritability, headache, poor appetite and often delusions. We must be careful how we order alcohol as a hypnotic. It is a fine remedy in some cases, but a two-edged sword in others. It is so convenient as a remedy that some physicians fall into its use and very soon, to their discredit, its abuse. When a physician reaches a constant state of insomnia he is a candidate for a rest cure and change, and not a course of hypnotics—so with all business men. Two of my most prominent patients in Philadelphia, when under extreme stress of business cares, can not sleep at home, but come to Atlantic City in the evening and sleep in the soporific influence of the sea air as calmly as a healthy child, and arise next morning fresh and vigorous—not drug logged. One writer has aptly said: "Insomnia is the rich man's burden—sleep the poor man's blessing." The rich constantly live in the future—the poor for to-day—thus causing most cases of insomnia in the former.

They tell us that trional and sulfonal are harmless hypnotics, and can be given almost with impunity within prescribed dosage. I do not believe any such nonsense. Those of us who have had the opportunity to study cases where either remedy has been constantly used will frequently find an individual who is extremely nervous; whose power of endurance is low; whose heart action is nervous and often weak and irregular. There are headache, backaches, general depression, loss of vitality and often memory, poor appetite, constipation or diarrhea, dizzy spells, or in fact many present a condition the Germans call *schwach.* Many begin with slight nervous or exhaustive insomnia, and by a constant use of trional or sulfonal substitute a train of real toxic symptoms that are too often incorrectly diagnosed neurasthenia. These two hypnotics are among the most valuable, insofar as small after-effects are concerned, when given occasionally; but in these, as in all others, we should always anticipate secondary toxic effects, and never fall into the rut of prolonged administration—we must look for the cause of insomnia and treat it.

Chloral, bromids, hyoscyamus, opium, paraldehyd, morphin, heroin, donoin and hundreds of others have their special indications in selected cases—never for prolonged use, but often for prolonged abuse. When we prescribe a hypnotic, we must do it intelligently and with due consideration, after we have given sufficient thought to justify its use. Many patients tax our resources and we meet with failures, but there is probably no case that exists without a cause. If that cause can be found by diagnostic or other methods, it is necessary to remove it or have it removed if possible; if such can not be done, we will be burdened by a toxicized hypnotic sufferer until death comes to his rescue. Volumes could be written on this interesting line, but let us listen to the words of Longfellow when he writes:

SLEEP.

Lull me to sleep, ye winds, whose fitful sound
Seems from some faint Æolian harpstring caught;
Seal up the hundred wakeful eyes of thought
As Hermes with his lyre in sleep profound
The hundred wakeful eyes of Argus bound;
For I am weary, and am overwrought
With too much toil, with too much care distraught,
And with the iron crown of anguish crowned.
Lay thy soft hand upon my brow and cheek,
O peaceful sleep! until from pain released
I breathe again uninterrupted breath!
Ah, with what subtle meaning did the Greek
Call the lesser mystery at the feast
Whereof the greater mystery is death.

OUR SEROTHERAPEUTIC MEASURES.

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The publication of an article of this general nature[1] seems justifiable, in order to extend familiarity with a phase of medical progress, which is nothing less than epochal in its achievements. It is also desirable that

1. It seems unnecessary to give detailed literature here. The fundamental facts may be found in one of the following monographs: Dieudonné: Immunität, Schutzimpfung und Serumtherapie, Leipsic, Joh. Ambrosius Barth, 1903; Marx: Diagnostik, Serumtherapie und Prophylaxe, Berlin, Hirschwald, 1902; Deutsch und Feistmantel: Die Impfstoffe und Sera, Leipsic, Geo. Thieme, 1903.

we appreciate the nature and degree of permanence of the results so far obtained in serum therapy, its present range of application and limitations, and the underlying principles of the successes and failures insofar as they are understood, in order that we may hold ourselves in a proper state of receptivity for results which the future is likely to provide.

The most distinctive features, medically and surgically, of the period in which we find ourselves, have developed from the knowledge of microbic etiology of the infectious diseases. Among the consequences of this knowledge, one of the most important is that the body, in the presence of an infection, has the power to produce specific substances, which antagonize the etiologic factor—toxin or bacterium. From this foundation our present serotherapeutic measures have been evolved.

Although the limits of this paper do not permit a detailed consideration of the developmental steps, yet it may contribute somewhat to consecutiveness to enumerate the following as the essential discoveries which have led to our present theories and practices: 1, The long-known efficacy of smallpox vaccination, which eventually led some investigators to think that this might be an example of a law capable of more general application; 2, the discovery, by Rayer and Devaine (1850), of "small filiform bodies" in the blood of sheep which had died of anthrax, which constituted an introduction to the domain of microbic etiology; 3, Pasteur's discoveries of the causes of fermentations, 1857-1861, and of the specific nature of the cause in a particular type of fermentation, i. e., microbic specificity; 4, Pasteur's investigations on the causes of epidemic silk-worm diseases; 5, the discovery of the microbic causes of many human and animal diseases by Pasteur, Koch and others; 6, Toussaint's partly successful attempts to vaccinate against anthrax by injecting anthrax blood which had been heated to 55 C. for ten minutes; this procedure killed the adult bacteria, but left the virulent spores unharmed, as a consequence of which many of the inoculated sheep died; 7, Pasteur's successful vaccine against anthrax, obtained by growing the bacillus under such conditions that it did not form spores; 8, the discovery of the bactericidal powers of the blood and serum by Fodor, Nuttal, Buchner, Nissen and Behring; 9, the discoveries of Behring and of Bouchard, that if an animal receives repeated injections of a microbe, the serum gains in bactericidal powers for the microbe used and the new power is specific; 10, announcement of the finding of the toxins of diphtheria (Roux) and tetanus (Brieger and Fraenkel); 11, the discovery that by immunizing an animal with a toxin, an antitoxin is formed; tetanus and diphtheria (Behring and Kitasato), ricin and abrin, vegetable poisons (Ehrlich); 12, the gradually evolved fact that if the serum of an immunized animal is injected into another, the latter may be protected from an otherwise fatal dose of the infecting agent, in which the Pfeiffer school took a prominent part; 13, the discovery that the bactericidal power of a serum depends on the combined action of two substances in the serum (Bordet); 14, the theory of phagocytosis (Metchnikoff); 15, the conception of the chemical nature of the reactions occurring in immunity, and the "side-chain" theory (Ehrlich).

From the above it is seen that after the principle of microbic specificity of infectious diseases was established, the next great stride was in the direction of protective inoculations. For this purpose the bacteria alone, either in a virulent or an attenuated form, were used; later, certain bacterial products were utilized for the same purpose. This method constitutes an active (Ehrlich) or isopathic (Behring) immunization of the animal. After the discovery of antitoxic and antibacterial serums it was found that they, too, could be used as protective agents (passive immunization according to Ehrlich). Certain of these procedures have also been found to have a curative value, the administration of diphtheria antitoxin holding the highest place in this regard. One may then classify the methods of rendering the body immune to infections and certain toxic diseases as follows:

I. PROPHYLACTIC INJECTIONS.

A. Active immunization.

1. Inoculation with virulent infecting agents:
   - A. Inoculation with small amounts of a virulent organism, i. e., of a non-fatal dose.
   - B. Inoculation with a virulent organism into a tissue which is resistant to the infecting agent; the success of vaccination against smallpox by using the virus obtained directly from the diseased, which was practiced in earlier times, was probably due to the fact that the virus found unfavorable conditions for the development of virulence in the skin; in some instances vaccination is more successfully accomplished by direct inoculation of virulent organisms into the blood stream (Kitt's method of vaccination against symptomatic anthrax).
   - C. The simultaneous injection of an immune serum with the infecting agent, the serum temporarily increasing the resistance of the animal; swine erysipelas, swine plague, rinderpest (mixed active and passive immunization).
2. Injection of attenuated infecting agents; attenuation by air and light (chicken-cholera, Pasteur); by cultivation at high temperatures (anthrax, Pasteur); by chemical agents (anthrax, Roux; diphtheria and tetanus toxins, Behring, Roux); by desiccation (rabies, Pasteur); by passage through other animals (swine erysipelas, Pasteur); this last observation was a most instructive one; passing the bacillus through the rabbit several times increased the virulence of the organism for the rabbit, but decreased it for swine, while passing it through the dove increased the virulence for the swine; the former product was used as vaccine I, the latter as vaccine II.
3. Injection of killed organisms (anthrax, Toussaint, 1880; swine plague, Salmon and Smith, 1886). This method is of the utmost importance in human diseases, as it is the safest means of vaccinating against cholera, typhoid and plague. In the Pasteur treatment of hydrophobia the first injection of the dried rabic cord probably contains the killed virus.
4. Injection of bacterial products:
   - A. Bacterial cell plasm (Buchner's plasmine, obtained by submitting the organisms to high pressure; and Koch's tuberculin TR).
   - B. Soluble bacterial products (the bacterial proteins, as Koch's old tuberculin, mallein, the soluble toxins, and the products of bacterial autolysis).

B. Passive immunization: The prophylactic injection of antibacterial and antitoxic sera.

II. CURATIVE INJECTIONS.

A. Active immunization.

1. Injection of killed micro-organisms in small doses with the intention of hastening antibody formation (Fraenkel in typhoid fever); value not yet demonstrated.
2. Injection of bacterial products; e. g., the attempt to cure tuberculosis by the injection of tuberculin (Koch).

B. Passive immunization.

1. With antitoxic sera; in diphtheria, tetanus, snake bites, plague, tuberculosis (?), typhoid fever (?), streptococcus infections (?), etc.

2. With antibacterial sera; in typhoid, cholera, plague, dysentery, streptococcus, staphylococcus and pneumococcus infections; of these the antiplague serum of Roux and Yersin seems to have the most value.

This seemingly intricate classification, which is taken in part from that of Deutsch and Feistmantel,[2] may be simplified for the purpose of this work as follows:

I. Protective injections.
  1. Antibacterial vaccination.
  2. Prophylactic injection of antitoxic sera.
  3. Prophylactic injection of antibacterial sera.
II. Curative injections.
  4. Antitoxic sera.
  5. Antibacterial sera.

It is important to bear in mind that in the struggle of the body against infections there are two principles of action—the antitoxic, directed against bacterial toxins, and the antibacterial, directed against the bacteria themselves. The two are absolutely distinct. A serum which is strongly bactericidal may have no power of neutralizing the toxin of the microbe, and vice versa, an antitoxic serum may not be able to kill the bacterium. Each of the five procedures enumerated above, then, is efficient, either because a greater bactericidal power or a greater antitoxic power is introduced into or induced in the body. In 1, the body reacts in such a way that its power to kill the micro-organism is increased (active immunization), while in 2, 3, 4 and 5, "ready-made" immunizing substances are introduced from without (passive immunization).

It is readily appreciated that after the possibility to vaccinate against diseases of known bacterial origin was known, the nature of the reaction in the body became the subject of investigation. The attempts to answer the question, what had happened in the body to change its resistance, gave rise to the various theories of immunity which have been current at various times. The exhaustion theory of Pasteur, at one time supported by Koch and by Klebs, the noxious retention theory of Chauveau and the allied theory of Baumgarten, have had to give way before the accumulated facts, which showed that new substances appeared in the blood as the result of an unusual and specific cell metabolism, having the microbic poisons as the stimulus. The phagocytic theory of Metchnikoff, as first formulated, at a time when toxic and antitoxic action was not appreciated, referred immunity to diseases and recovery from them to the ability of various cells of the body, especially the leucocytes, to ingest and kill the bacteria. When, however, it was discovered that antitoxic and bactericidal substances were formed and could be demonstrated in the serum of the blood, it became necessary to ascribe new functions to the phagocytes if they were to retain the exclusive dignity of protecting the body against all manner of infectious diseases. To accomplish this it was necessary to assume that the phagocytes are resorptive cells in a broad sense; that they take up, not only formed elements, but also unformed, and that antitoxin and the antibacterial bodies are the result of phagocytic metabolism.

The most recent theory, and one which has gained wide recognition, is the side-chain theory of Ehrlich, a brief consideration of which seems advisable here, because of its wide application and its tendency to put the reactions of immunity on a chemical basis. It is supposed that nutritious molecules, as well as toxic, obtain access to the cell by uniting chemically with certain atom-groups of the cytoplasm. These atom-groups are a part of the more complex chemical structure of the cell; hence an outside substance which enters into combination with the cell in this manner is able to influence the whole cell in its chemistry and physiology. From this relationship it is understood why the atom-groups mentioned are called side chains in the sense of organic chemistry. Furthermore, as the side chains are the agencies through which food particles and toxins are received into the cell, they are also called receptors. Toxin then forms a chemical union with the cell through the medium of the receptor; hence the receptor can play an injurious rôle for the cell, in the case of toxin, while it also plays a useful rôle in the case of food substances. When a toxin molecule is once united with a cell receptor it is, naturally, not free to injure other cells. Now if, through some agency, a cell receptor should be separated from the cell and thrown off into the circulation, it would still have the power of uniting with a toxin molecule, so that here also the latter would not be free to injure cells. Now there appears to be a general law, first enunciated by Weigert, that when a tissue is injured its cells reproduce not only to the extent of making good the defect, but to an excess; scar formation is cited as an example of this process. Transferring this conception to cell metabolism, when a cell is injured by having a side chain (receptor) neutralized or destroyed, it reproduces not one but many side chains to take the place of the one bound to the toxin molecule. In antitoxin formation the overproduction of receptors takes place to such a degree that they are thrown off from the cell into the circulation; these cast-off receptors constitute our antitoxin. Certain phenomena in the union of toxin and antitoxin make it convenient to assume that the two unite through the agency of certain atom complexes which each possess; these are called the binding or haptophore groups of the molecules. It is, furthermore, considered and proved, that the ability of the toxin molecule to produce injury rests in another group which is called the toxophore. The evidence of this lies chiefly in the fact that an old toxin which has lost its toxic powers is still able to produce a strong antitoxin by immunization; accordingly, it must still have a binding group, while the loss of toxicity is ascribed to the degeneration or disappearance of the toxic group—the toxophore. This degenerated toxin is called toxoid. The toxin molecule then contains a haptophore and a toxophore group, while for antitoxin it is necessary to assume the existence of only a haptophore group. The neutralization of toxin by antitoxin may then be considered as relatively simple, and that it takes place according to the general laws of chemical reactions is shown by an abundance of experimental evidence. A new innocuous compound is formed, no digestive or ferment-like action coming into play. This was proved by Calmette for venom, and by Wasserman for pyocyaneus antitoxin.

On the other hand, the destruction of bacteria by a bactericidal serum seems to be far more complicated. Bordet's discovery was mentioned at the outset, that the power of a serum to kill bacteria depends on the presence of two substances, neither of which alone is active. One of these bodies, the amboceptor (Ehrlich nomenclature) is greatly increased by the immunization of an animal, or during the natural recovery from microbic disease. Like the antitoxin it has a normal residence in the body cells, where it exists as a cell recep-

2. Die Impfstoffe und Sera, Leipsic, Geo. Thieme, 1903.

tor, and it is reproduced to excess in the same manner. It differs from the antitoxin receptor, however, in having two haptophore groups instead of one; through one it is able to form a union with the bacterial cell, through the other with the complement. It is fairly resistant to the destructive effects of light and heat and air; and as intimated, acts as an intermediary body between the bacterium and the complement. Complement, the second body, exists normally in the body fluids, is practically not increased by immunization, is easily destroyed by heat, light and air, and after being united to the cell through the medium of the amboceptor destroys it by a ferment-like (?) action. Inasmuch as it unites with the amboceptor, a haptophore group is ascribed to it; since, also, observations show that it has a toxophore or zymotoxic group, its structure is not unlike that of the toxin molecule. The degeneration of the zymotoxic group gives rise to complementoid.

If, in the above, the fundamental conceptions of Metchnikoff and of Ehrlich have been stated clearly, it can be seen that there is no essential conflict between the two. Metchnikoff makes the phagocytic cells of the body the producers of the immunizing substances to the exclusion of other cells, while the Ehrlich theory is broader in this respect. On the other hand, the latter theory does not necessarily deny to the phagocytes an important function in recovery from infections.

PRACTICAL RESULTS.

A summary of the practical results of serotherapeutic measures may now be given, taking up separately the five procedures classified above.

1. *Antimicrobic Vaccination.*—This continues to be applied along the lines laid down by Pasteur. In all probability vaccination against smallpox, and the Pasteur treatment of hydrophobia, the success of which are sufficiently well known, fall into this group. In vaccinating against anthrax and chicken cholera Pasteur used attenuated and virulent organisms. Since that time killed organisms and certain bacterial products or extracts have been used for the same purpose in various diseases. In accordance with the procedure one would expect the development of antibacterial substances in the blood, in the form of specific amboceptors, while an antitoxin is not necessarily formed. In the cases of typhoid, cholera, plague and dysentery bactericidal amboceptors are formed, and are capable of ready demonstration *in vitro,* their activity depending, however, on the presence of complement as indicated above. Since such bodies are demonstrable *in vitro,* it is logical to assume that the protection afforded by vaccination is due to their presence in the vaccinated body. Concerning another class of organisms where vaccination is accomplished less readily (streptococcus, staphylococcus, pneumococcus, tubercle bacillus and others), the demonstration of bactericidal antibodies *in vitro* is not so satisfactory, although the antiserum in some cases is able to protect another animal from an otherwise fatal infection.[3] Accordingly, against this class of organisms the mode of protection in the body is more obscure than in the first group; and as immunization with them is not accomplished in one or two injections they are not practically employed in protective inoculations.

So far as man is concerned application of this procedure is made against cholera, typhoid and plague and bacillary dysentery (Kruse). Our largest statistics on anticholera vaccination come from the Haffkine method (1892), practiced especially in India, in which two injections are made; first, a culture of low virulence followed, some days later, by one of high virulence. Kolle claims that a single injection of the killed vibrio has the same value as that of the living. Haffkine also introduced antiplague vaccination into India in 1896, using cultures which had been killed by heat, for the inoculations. Lustig and Galeotti, on the other hand, prepared a dried vaccine by first extracting the bacilli with potassium hydrate solution, then precipitating with acetic acid. The washed and dried precipitate constitutes the vaccine and is also used in the immunization of animals to obtain an antitoxic plague serum. Antityphoid vaccination received its first experimental support from Pfeiffer and Kolle in 1896, but we are indebted to Wright of the British army for the most extensive statistics concerning its value as practiced among the troops of South Africa and India.

It seems unnecessary to enter here into a discussion of the statistics which have been compiled in reference to vaccination against these three diseases. The essentials are to be found in any one of the monographs mentioned at the outset, and Wright's reports have appeared in the British journals at intervals during the past few years. In general, it may be said that the reports show that the percentage of cases which develop among the inoculated is distinctly below that of the uninoculated, and, moreover, that when the disease does occur in the inoculated it appears to be less virulent than in the uninoculated. The statistics indicate such a degree of success that we may consider the method one of established value, and one to be practiced under the proper circumstances. Plague and cholera hardly concern our communities at present. In regard to typhoid, however, we still have in mind the epidemics which occurred in Ithaca, N. Y., and Butler, Pa., where the conditions seem to have been such that the vaccination of all uninfected within the danger limits would have been a warrantable procedure. We also remember, not many months ago, an outbreak of typhoid fever in a circumscribed district in Chicago, where antityphoid vaccination would have found a suitable field. So far as known there can be but one source of danger in the procedure. Experiments with the serum of man and animals show that, after the inoculation several days must elapse before the immunizing substances are increased, and what is of greater importance, the natural resistance of the animal may be in the meanwhile slightly decreased. This would appear to create a danger period for the inoculated in the presence of an epidemic, but certainly not a danger of magnitude, as the period of decreased resistance has a duration seemingly of but a few days. It seems, moreover, that this danger can be eliminated by the simultaneous injection of the specific immune serum. On the other hand, the increased resistance which follows vaccination is well sustained, being clearly evident in both cholera and typhoid after thirteen or fourteen months. Opportunity has not yet been afforded to judge of the value of antidysentery vaccination.

Protective inoculation (more strictly, immunization) against tuberculosis has been confined entirely to animals. Setting aside the dubious results obtained by immunization with tuberculin, interest at present centers on the method of immunizing with avirulent or attenuated cultures of the bacillus. Of importance in this

3. Denys found that an antistreptococcus serum was made streptococcidal by the addition of fresh leucocytes; Tavel confirmed this and in addition claimed that the fresh serum was streptococcidal for a brief period (one hour); the statement then that antistreptococcus serum is not bactericidal must be accepted with some reservation.

connection is the position taken by Koch that the human and bovine bacilli are not the same organisms, at least in their pathogenic powers; that the human bacillus is less pathogenic for cattle than for man, and the bovine bacillus less pathogenic for man than for cattle. Hence he has proposed the immunization of cattle with the human bacillus, and he and his followers claim a good degree of success. Trudeau and de Schweinitz in this country, von Behring in Germany, and Maragliano in Italy, have for a number of years carried on similar work, likewise with some success. As bacilli of low virulence one may use attenuated human or bovine bacilli, the avian or fish bacillus, or as Friedman has recently done, an organism cultivated from the turtle. Friedman claims to have successfully immunized guinea-pigs, the most susceptible of all animals, against infection with the most virulent tubercle bacillus. While this work is of the utmost interest, the methods are naturally not applicable in human therapy at present.

2. *Prophylactic Injection of Antitoxic Serums.*—The value of diphtheria antitoxin as a prophylactic is so well recognized that it need not be discussed now. Tetanus antitoxin, on the other hand, is much neglected in this its most promising aspect. However disappointing it has been as a curative agent, there is evidence to show that its value as a prophylactic is almost equal to that of diphtheria antitoxin. This value is apparently better appreciated by veterinarians than by medical men. A celebrated example of its protective value concerns an epidemic of tetanus in an obstetric clinic in Prague which was completely suppressed by injecting all patients with the antitoxin after all other precautions had failed. Evidence of equal value is also accumulating in this country by giving the antitoxin in cases of Fourth of July wounds before tetanus has had time to develop.

3. *Prophylactic Injection of Antibacterial Serums.*—Pfeiffer and his pupils have made us familiar with the fact that animals can be protected against cholera and typhoid by first administering the antisera of these organisms. Similar conditions prevail with the majority of our pathogenic microbes, as shown by facts which have been worked out by many observers. The injection of the serum is best made twenty-four hours in advance of the infection. This immunity is unfortunately one of short duration, as after two or three weeks the protective substances are eliminated. To sustain the immunity by frequent injections would be arduous, and might, moreover, be injurious, since investigations have shown that it is possible to establish an immunity to an immune serum; this would be equivalent to annihilating the individual's natural resistance to the disease. For these reasons the method has had a very limited application. Inasmuch as the immunity conferred by this method is immediate, though transient, while by the vaccination method some days are required for the development of protective substances, it has been proposed to combine the two. If this can be carried out successfully, it will be possible to obviate every disadvantage in connection with vaccination against typhoid, cholera and plague. Besredka has proposed saturating the killed or living bacteria with their specific amboceptors and using this preparation as a vaccine. His animal experiments showed that immunity was conferred immediately and had a duration of at least nine months.

4. *Curative Injection of Antitoxic Serums.*—The efficacy of diphtheria antitoxin is so well known that no comment is called for. The early administration of sufficiently large amounts in mild as well as malignant cases, repetition of the injection if prompt subsidence does not occur, and its use in doubtful cases are the points to be kept in mind.

One might dismiss tetanus antitoxin, as a curative agent, with almost equal brevity, by saying that little is to be hoped from it in its present form and methods of application. I have already dwelt on its great value as a prophylactic. The work of Marie, and more recently that of Meyer and Ransom, which apparently show that the toxin reaches the central nervous system through the axis cylinders of the peripheral nerves, point to the intraneural injection of the antitoxin as a procedure of possible value. In spite of what has been said, the occasional reports of cases supposed to have been cured by the antitoxin justify its continued application, in particular the subdural injections.

Calmette's antivenin is efficient in animal experiments, and no doubt it would be equally so in man if used early enough.

Maragliano claims high value for his tuberculosis antitoxin as a curative measure, but its use has apparently not extended.

Nothing can be said at present concerning the efficacy of Marmorek's new tuberculosis antitoxin; the results so far are certainly not encouraging.

Distinct curative power is ascribed to the pest antitoxic serum of Lustig as used in India. The typhoid antitoxic serum of Chantemesse has been so little used that its value is not definitely established.

5. *Curative Injection of Antibacterial Sera.*—This concerns the class of microbes which, it is currently supposed, do not form soluble toxins. In this group one must distinguish between the sera which are bactericidal (*in vitro*), and those which are not. As already indicated, among the former are the typhoid, cholera, plague and dysentery sera; among the latter the sera of the streptococcus, staphylococcus and pneumococcus. In spite of this difference both types of serum are actually antibacterial when injected into an animal in advance of the infection, the power of the former being in excess of the latter. If, on the other hand, the bacteria are injected first, the efficiency of the serum decreases so rapidly that only in exceptional instances will any quantity save the animal after the lapse of twenty-four hours. That is to say, such sera as now constituted have little power over established infections, and since in man we are called on to treat established infections, they offer little hope as curative procedures. Cholera antiserum has no prospects, according to Pfeiffer, inasmuch as the situation of the vibrios in the intestinal canal makes them inaccessible to a possible action of the serum. A probable exception lies in the antipest serum of Roux and Yersin, of which 0.5 c.c. will save a mouse sixteen to twenty hours after the infection. In Yersin's hands the mortality in man was reduced from 80 per cent. to 49 per cent.; in the hands of Calmette and Salimbini in the Oporto epidemic, from 63.72 per cent. to 14.78 per cent. Likewise Kruse's antidysentery serum may prove of distinct value.

Antistreptococcus sera are classed as monovalent and polyvalent, depending on whether one or several races were used in the immunization. The sera of Marmorek and Aronson are monovalent; those of Tavel, Moser and Menzer are polyvalent. The object in using several different cultures of streptococci in the immunization is that the resulting serum may be active against a larger variety of streptococcus infections, it being supposed

that there are biologically several types of streptococci. As stated, such sera are not conspicuously bactericidal *in vitro*; hence it is not known on what their action depends. They may have antitoxic powers in the animal's body, may unite with a tissue substance to constitute a bactericidal substance, or may in some way stimulate phagocytosis. Marmorek claims antitoxic properties for his serum.

They are used against various streptococcus infections, particularly streptococcus septicemia and erysipelas; furthermore, against scarlet fever (Moser-Escherich, Aronson-Baginsky), and acute rheumatism (Menzer) on the as yet unproved assumptions that these diseases are caused by streptococci. Moser and Escherich, and to a less degree Baginsky, in scarlet fever, Menzer in rheumatism, and Tavel and Marmorek in various streptococcus infections, claim benefits from the use of their serums; but to the disinterested their results seem at present indecisive.

What has been said of antistreptococcus serums as curative measures can also be said of antipneumococcus and antistaphylococcus serums.

There is occasion for protest here in that a most essential control is so seldom made. In animal experiments we demand that the effect of an antiserum be controlled by the effect of a normal serum from the same source. Now, if an antiserum had such decisive value as diphtheria antitoxin the control could well be omitted in man. Inasmuch, however, as the value of these serums is in question, the controls should be made, and could be made without jeopardizing the welfare of the patients. As an illustration, one may quote the work of Römer, who claims curative power for antipneumococcus serum in the treatment of serpent ulcer of the cornea. The treatment consists of the local infiltration of the serum by means of a syringe. It is quite possible that the injection of a like amount of normal serum would have been followed by equally good results. This consideration acquires more importance when we recall that it was long ago demonstrated that various indifferent fluids when injected into the abdominal cavity of an animal increase the resistance of the animal to a subsequent abdominal infection.

GENERAL CONSIDERATIONS.

The Time Element and the Question of Affinity.—Diphtheria antitoxin when injected into an animal will protect him against an attack of diphtheria; it will likewise cure the established disease when given in time, and when mixed with the toxin in the test-glass neutralizes it in chemical proportions. Tetanus antitoxin is also able in the test-glass to neutralize the corresponding toxin in exact chemical proportions, and when injected into an animal will protect against a subsequent infection with the toxin or the bacillus. So far it is parallel with diphtheria antitoxin in its efficacy. When, however, the disease, tetanus, has declared itself clinically, its value as a curative measure falls far below that of diphtheria antitoxin.

It is also well known that both in diphtheria and tetanus, the earlier the antitoxin is administered the more certainly can cure be accomplished and the less antitoxin is required to work the cure; conversely, the longer the antitoxin is delayed the more remote are chances for cure, and the more antitoxin is required if the cure is accomplished. If a neutral mixture of tetanus toxin and antitoxin is injected into an animal no tetanus results. Dönitz found that if the toxin were injected first and the antitoxin four minutes later, a slight excess of antitoxin was required for neutralization; if he waited eight minutes six times as much antitoxin, after sixteen minutes twelve times as much, after one hour twenty-four times the simple neutralizing dose was required. A few hours later no amount of antitoxin could save the animal.

In explanation of these facts the following points are to be considered: In the test-glass are toxin and antitoxin alone, two substances capable of entering into a chemical reaction; there is no third substance which has an affinity for one or the other. If two times as much toxin is added two times as much antitoxin will neutralize it. When, however, the toxin gets into the body, it is in the presence of a third factor—the tissue cells—for which it has an affinity equal to if not greater than that it has for the antitoxin. Tetanus toxin accordingly will form a chemical union with nervous protoplasm when the two come into contact. Even after four minutes a certain amount of toxin was bound in Dönitz' experiments. When the antitoxin was injected a certain amount of it was required to neutralize the toxin still unbound by tissue cells, while all above the simple neutralizing dose was required to tear away the toxin already bound. Accordingly, after one hour, when twenty-four times the simple neutralizing dose was required for this, the figure 24 represents the affinity of the bound toxin for the nervous cells. This is interpreted in chemical terms as a mass action on the part of the antitoxin, i. e., it represents the amount of antitoxin necessary to dissociate the toxin—nerve-cell compound. As stated, a time is rapidly reached when no amount of antitoxin will save the animal. At this time the process passes beyond that of simple chemical union of toxin and tissue. Further chemical action, of a biologic nature, sets in, as a result of which the toxin probably becomes an integral part of the cytoplasm and proceeds to its injurious action, whatever the nature of this action may be.

In view of these facts, the efficacy of early as compared with late administration of antitoxin finds a logical explanation. Now, early and late are relative terms; what is early for diphtheria is late for tetanus. In either case the disease begins at the time of the infection, and, on this basis, the second day of diphtheria may correspond to the tenth or fourteenth day of tetanus. Hence the success of the serum therapy depends on the administration of the serum as soon as possible after infection.

In diphtheria there is no means of suspecting infection until the disease has declared itself; in tetanus, on the other hand, although the diagnosis can not be established until clinical symptoms have appeared, the nature of the wound is often sufficient to arouse suspicion as to tetanus infection. In all such cases the failure to give the antitoxin prophylactically amounts to a gross neglect of duty.

Concerning the Low Value of Antibacterial Sera.—Sufficient has already been said about the time element in the administration of antibacterial serums. As the exact reasons for the low curative value of these sera are still problematic, it is hardly proper in a general paper to more than mention briefly several possible factors.

1. The bacteria may be so situated in the body that they would be inaccessible to an immune serum. As stated Pfeiffer has given up hope of a successful treatment of cholera with a bactericidal serum on this basis.

2. The body cells may contain receptors, which are

able to unite either with the amboceptors or the complement, or both, and this affinity may be a greater one than that existing between the bacterium and amboceptor. This would effect a deviation of the amboceptors from the bacteria. That this is possible is shown by the fact that on immunizing an animal with an immune serum, anti-amboceptors may be formed; this could not happen unless it were possible for the amboceptors to unite with tissue cells. Also as anticomplement formation is readily induced, it is evident that complement may be bound by the tissue cells. Von Dungern[4] has demonstrated experimentally this binding of complement.

3. Since in an antibacterial serum, as one would purchase it on the market, all complement would long ago have disappeared, the amboceptors would have to depend for their activation on such complement as might be present in the patient's body. This might be too small in amount or not of the right sort. From this it is readily seen that the search for a universal or for various artificial complements or even for proper serum complements in abundance, is a problem of the utmost importance for the efficacy of these serums.

4. It is not yet assured that a powerful bactericidal serum would not, in destroying the bacteria, liberate a detrimental amount of intracellular toxin. A celebrated experiment of Pfeiffer's gives ground for this fear; a certain time after infecting a guinea-pig peritoneally with cholera, an amount of immune serum was given which killed all the bacteria, yet the animal died of intoxication.

5. Although it has been found possible to cure animals of typhoid and other infections when the proper time relationship is observed, even with small amounts of bactericidal serums, when these amounts are reckoned for man they reach as high as 600 or 700 c.c. This factor alone would make their extensive use impracticable.

Reference has been made to antibacterial serums which are not bactericidal *in vitro*. That such serums do contain protective antibodies of some nature seems clearly shown by the work of Wasserman on the pneumococcus, Peterson, Pröscher and others on the staphylococcus, Denys, van der Velde, Marmorek, Tavel, Moser and Menzer on the streptococcus. The opinion that such serums are protective because they stimulate phagocytosis, is somewhat prevalent (the Metchnikoff school attributes the curative action of all antibacterial serums to this process); and in view of the high leucocytosis present in streptococcus, staphylococcus and pneumococcus infections, and the fact that the serum of convalescents show no bactericidal power for their respective microbes, it seems impossible to divorce the leucocytes from a most active part in the recovery from these infections.

The Immunization of Bacteria.—If animal cells can be immunized against bacteria and their products, why can not bacteria be immunized against animal cells and their products? In other words, during the course of a disease, is it not possible for the protective substances of the body, by uniting chemically with the bacteria, to stimulate them to the production of anti-amboceptors or anticomplement, or both? This question has been discussed by Welch and others. These new-formed antibodies of bacterial origin would then combine with the protective substances of the body leaving the bacteria unantagonized. There is not yet sufficient evidence to show that this theory has practical importance, but that the bacteria are capable of reacting in this manner is shown by the recent works of Walker, Müller, Wechsberg and Eisenberg. There is, furthermore, in this connection, the long-known fact that a typhoid culture fresh from a patient is agglutinated less readily than one which has been on artificial culture media for some time. It would seem from this that the bacillus while in the body acquired anti-agglutination powers from being in contact with the agglutinating substances of the body fluids.

Artificial Complement and Amboceptor.—Inasmuch as complement is absolutely necessary for the action of a bactericidal serum, and since, moreover, its lability is extreme, the discovery of readily accessible artificial complements would be a step of evident value. Although such a substance has not been discovered for the amboceptor of a bactericidal serum, Kyes found that lecithin, a substance of known composition, would activate the hemolytic amboceptors of snake venom.

In this connection an observation by Landsteiner and Jagic[5] is of the highest interest. A colloidal solution of silicic acid has precipitating powers and will agglutinate red blood cells, but causes no solution of the corpuscles. If, however, a very small amount of lecithin is added to the agglutinated red cells, the latter are dissolved. Hence the silicic acid is the analogue of amboceptor, lecithin of complement in this reaction. Since also unheated serum would activate the hemolytic power of the silicic acid the analogy to the amboceptor and complement action of an immune serum is the more striking.

In the cytolytic process by a specific serum, we have, on the one hand, the body to be acted on (bacterium or tissue cell), and on the other hand, the acting substances, amboceptor and complement; all three are chemically unknown substances. In the condition which Kyes dealt with, one of the acting substances became a known quantity, the other active body and the body acted on being chemically unknown. In the experiments of Landsteiner and Jagic, both active substances were known bodies, the substance acted on remaining still unknown. I have recently had occasion to study a reaction in which the substance acted on is known, while the two active bodies are unknown. Nervous tissue contains two substances, by the combined action of which methylene blue can be changed into the colorless dye. One of the substances in the nervous tissue can be extracted by salt solution; the sediment (washed) is then unable to reduce the dye, but the power can be re-established by the addition to the sediment of a trace of serum, itself non-reducing. When methylene blue becomes the leuco-compound its composition is changed by the taking up of two hydrogen atoms; if this reaction were analogous to that of a cytolytic serum, it would suggest that cytolysis may be accomplished by a reduction process.

These observations encourage one to believe that a new point of departure has been established, which may lead to important results as to the chemistry of immunity.

The Influence of Inorganic Salts.—A number of years ago Buchner made observations tending to show that inorganic salts were important factors in the activity of a bactericidal serum. No theoretical or practical re-

4. Beiträge zur Immunitätslehre; Münch. med. Woch., 1900, No. 20.

5. Weiner klin. Woch., Jan. 21, 1904.

sults of importance issued directly from his work, however.

Professor Hektoen has taken up certain phases of this work recently, and finds that various salts, even in minute quantities, are able to inhibit the action of the complement of hemolytic and bactericidal serums. Hence it is not impossible that our susceptibility and resistance to various infections may be subject to important modifications because of the nature and concentration of the salts in the blood at a given time.

In conclusion, it is evident that very important laws have been discovered, in accordance with which certain immunity reactions occur. Certain of our serotherapeutic measures, in particular vaccination and the antitoxin treatment of diseases, justify the belief that the laws as enunciated are correct. However, the degree of failure which has accompanied the attempt to cure typhoid, cholera and other diseases with antibacterial serums, in themselves specific and often powerful, shows that to these laws are attached certain corollaries, the mastery of which must be accomplished before further progress is made in this direction. It is the opinion of many that an entirely new way must be opened up, but as to the course indicated there is no clear conception. Wright is of the opinion that our physicians must turn vaccinators, ready to give all who may wish a protective inoculation against typhoid, plague, streptococcus or pneumococcus infections. Although there may be possibilities in this procedure, man on the whole is too much of a procrastinator to seek for vaccination against a carbuncle which is not imminently threatening him, or an attack of typhoid fever in the absence of an epidemic. That there are conditions where such a procedure is distinctly called for has been indicated above.

What seems clear now is that antitoxin treatment for all our infectious diseases is above all else to be sought for. So far, however, all attempts to obtain from such bacteria as the typhoid bacillus, toxins, immunization with which will yield an antitoxic serum of value in treating the established infection, have failed. It remains to be seen whether the typhoid toxin which Macfadyen obtains by grinding the bacillus at the temperature of liquid air, will permit of the production of an antitoxin capable of influencing the disease as it occurs in man. If success is encountered in typhoid there is reason to hope that the method will find equal application in certain other diseases.

THE APOSTOLI TREATMENT.

THE FINAL RESULTS OF ITS USE IN SOME CASES OF FIBROID TUMOR OF THE UTERUS.*

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It is now somewhat more than sixteen years since I began the electric treatment of fibroid tumors of the uterus after the method of the late Georges Apostoli of Paris, and having occasion recently to revise the subject for a work now in preparation, I have been strongly impressed with the desirability of giving to the profession a brief review of the practical results that have attended this work in this long series of years. The value of the Apostoli method was hotly contested in medical literature some years ago. The time has now come when a dispassionate conclusion as to its real value is in order.

It may be recalled also by some of you that this society appointed a commission to investigate this question during this controversy. I think the date of this commission's appointment was in 1889 or 1890. I am not aware that a report was ever made by it, and suggest that it is by no means too late for the work to be undertaken and a report prepared that would be of great service to science. The lapse of fourteen or fifteen years between the appointment and report of this commission would, indeed, be an advantage rather than a disadvantage, for the question at issue takes a considerable time for its determination when we remember that the treatment itself requires from six months to three years in a given case, and that an important part of the investigation relates to the practical results, as shown in the well-being of the patient in after years.

Should the commission decide to investigate the subject, it will find the majority of these patients living, and their present condition can be easily compared with the records of their original status as noted by competent physicians.

During the sixteen years mentioned I have had under more or less thorough treatment 110 cases of fibroids, which have been carefully tabulated in the exact order in which they were first seen. I have made efforts recently to ascertain the present condition of as many of these patients as could be found by letters, circulars and personal inquiries, with the following result:

Cases in which the results are unknown		9
Cases resulting in anatomic and symptomatic cure	22	
(Including 18 that disappeared by absorption, 3 extruded through cervix in whole or part, and 1 destroyed piecemeal by electrolysis.)		
Cases resulting in symptomatic cure only	53	
(Including 12 with great reduction in size, 26 with slight reduction in size, and 15 permanently relieved of symptoms without change in size.)		
Total cases resulting in practical success		75
Cases resulting in partial or complete failure		26
Total cases treated		110

Excluding the 9 cases in which the results are unknown, largely transient patients at a public clinic, long since discontinued, it will be seen that the figures given show 75 actual or practical cures and 26 failures in 101 cases. In other words, three-quarters of the cases were successes and one-quarter failures.

The word "failure" should be further defined in connection with this work. With the exception of the result in one case, it means that the patient is left in a condition exactly the same as before treatment, and in a position to accept operative removal if necessary or desirable. The exception was an instance of death from septicemia in the year 1888, due to the failure to recognize the existence of a cystic condition, an error of diagnosis which was shared with one of the most eminent of living gynecologists. How many of the remaining 25 failures were subsequently operated on is uncertain, except in the cases of seven patients, in three of which the operation was undertaken at my suggestion.

Turning from the failures to the successes, it will be noted that the result was satisfactory in three-quarters of the cases treated with known results. This is an important fact. The majority of these patients were contemplating operative removal when they sought advice, with all that it implied in danger to life and certainty of unsexing results. These women are to-day happy wives—some even disconsolate widows—for I have been surprised to note from the replies of patients who were

* Read before the Philadelphia County Medical Society, April 13, 1904.

treated ten and fifteen years ago the large proportion who have outlived the husbands that brought them to me.

The proportion of total disappearance of the tumor—18 out of 110 cases—is, I believe, larger than has been reported elsewhere. Some of these instances have not been personally verified by me, and are merely reported as the patient's opinion, but in several instances I have verified the total disappearance of growths which were originally as large as an adult head, or even larger. As for the practical aspects of the patient's opinion of the disappearance in the cases not verified, I may say that, if the person most concerned can not find the harmless remnants of the absorptive process, who need look for them?

No one, surely, would doubt the wisdom that inspired this method when questioning these cured patients, including both those in whom a harmless remnant may be found and those anatomically cured, for it will be hard to realize that these healthful individuals were once confronted with the dreadful verdict of leaders in our profession which prescribed a dangerous and unsexing operation as the only alternative to death, or at least to permanent illness.

Turning to the question of the selection of cases for this method, these statistics teach that hemorrhagic cases are always cured of their dangerous symptoms, the hemorrhages ceasing and the tumors usually decreasing satisfactorily. The interstitial type is also peculiarly susceptible to the treatment and frequently is entirely absorbed.

Those least adapted to it are the pedunculated subperitoneal type; the hard, monocentric, ball-like inclusions in the uterine wall; and those associated with purulent accumulations in the appendages. Whether these should be removed by hysterectomy depends on the amount of suffering or deformity produced by them. The list summarized in this paper includes one case of intrauterine cystic tumor that was cured absolutely by a modification of the Apostoli treatment, but it may be stated that cystic myomata, or any other form of degenerative fibromyoma, should be removed by hysterectomy when practicable. This was impossible of safe accomplishment in the case referred to, in the opinion of the surgeons who sent her to me, and the somewhat hazardous method of treatment by intrauterine bipolar electrolytic destruction with strong currents finally resulted in complete disappearance of the growth and full restoration of health.

CONCLUSIONS.

1. A prolonged observation of cases of fibroid tumors of the uterus under the Apostoli treatment teaches that three-quarters of the cases subjected to the method will be practically cured, as attested by inquiries made from three to sixteen years after the cessation of treatment.

2. The cases that responded poorly, or not at all, to this treatment are not harmed by it, when properly applied, and heroic measures may then be adopted with the certainty that milder means are of no avail.

3. Hemorrhagic and interstitial fibroids are best adapted to the Apostoli treatment, while subperitoneal or degenerative fibroids and those complicated with pyosalpinx are least adapted to be relieved by it.

4. So far as my inquiries and circulars show, there have been but seven deaths among these 110 patients during the sixteen years or less that they have been under my observation. It is an interesting fact, moreover, that but one of these deaths was due to the progress of the growth itself, proving the non-mortal character of this affection. Of the remaining six, one died long after treatment of an affection totally unconnected with the growth, one of septicemia under electric treatment as related, and four while being operated on with the knife.

COMPLICATIONS AND DEGENERATIONS OF UTERINE FIBROMYOMATA.

A PATHOLOGIC AND STATISTICAL STUDY OF TWO HUNDRED AND EIGHTY CASES.*

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INTRODUCTION.

Recent discussions in the surgical and gynecologic branches of the American, British and French medical organizations indicate a renewed interest in the question of treatment of uterine fibromyomata. This is due largely to facts brought forth as the result of the systematic routine pathologic examination of all fibroid tumors. The frequency with which fibroid tumors present degenerations and are accompanied by complications has upset the classical teaching in regard to prognosis and treatment of these growths. More particularly has interest been stimulated in regard to the so-called "malignant degenerations," as is evidenced by the prominent place which carcinoma and sarcoma occupy in recent publications on myoma. At present, however, the results of pathologic studies are not definitely collected, and there is a lack of statistical comparison. The importance of bringing together such results is evident, for the question of operative interference and extent of operation must depend on information derived from combined clinical and pathologic reports. In regard especially to the extent of operation are the results of pathologic investigation of value. While in the removal of a benign tumor it is without doubt ideal that the patient should suffer as little mutilation as possible, still that operation must be done which offers the least danger, and at the same time takes into consideration the various attendant complications. On this point recent investigations indicate that the complications of myomata are by no means to be lightly considered. Aside from the tumor itself, the adjacent organs must be taken into account.

The question of the condition of the ovaries is important from the fact that in supravaginal hysteromyomectomy the trend of opinion among gynecologists is that an ovary should be left in order to ameliorate the severe menopausal symptoms sometimes produced by complete ablations. For this reason the microscopic study of these organs is important in order to determine the frequency of disease of the ovary in connection with myoma.

Also, after hysteromyomectomies and myomectomies, the possibility of infection from a diseased tube is of importance, not only as concerned with the union of the wound, but also as regards the mortality of these operations. Hence the examination of the tubes for salpingitis, pyosalpinx, etc., is of no slight value.

In the study which is here presented, an attempt has been made to determine the frequency of the various degenerations and complications and to base thereon certain general conclusions concerning treatment.

* Read before the Philadelphia Obstetrical Society.

GENERAL LITERATURE.

Since Martin[1] in 1888 made his study of degenerations in 205 cases of fibromyomata, others have reported similar series, notably Noble,[2] 258 cases; Cullingworth,[3] 100 cases; Mary Scharlieb,[4] 100 cases, and Frederick,[5] 125 cases. Combined, these make 788 cases available for the classification as to degenerations. There is some slight difference in the classifications of the five writers, but by taking certain liberties with their tables,[6] the degenerations may be summarized as follows:

Fatty degenerations	7
Calcareous infiltration	11
Necrosis	55
Cystic degeneration	34
Telangiectasis	46
Sarcoma	17
Associated carcinoma cervicis	15
Associated carcinoma corporis	17
Myxomatous (edematous)	8
Associated syncytioma[7]	1

(Total number of cases, 788.)

Martin has not estimated his complications; so for the purpose of that classification only the series of Noble, Cullingworth, Mary Scharlieb and Frederick are available. They are as follows:

Appendicitis	13
Hydrosalpinx	41
Hematosalpinx	2
Ovarian cyst	32
Dermoid cyst	5
Ectopic pregnancy	4
Papillary carcinoma of ovary	2
Pyosalpinx	18
Salpingitis	10
Abscess of ovary	7
Tubo-ovarian abscess	1
Dilated ureters and hydronephrosis	1
Dilated ureter, hydronephrosis and pyelitis	1
Parovarian cyst	3
Cystic ovaries	18
Hematoma of ovary	1
Tubercular peritonitis	1
Universal adhesions	22

(Total number of cases, 583.)

In making this complication the difference in classification is more apparent. Frederick and Mary Scharlieb alone make mention of cystic ovaries. Cullingworth in his 100 cases does not mention salpingitis. Many complications of a purely clinical nature, as retroversions of the uterus, etc., have been eliminated in order to bring classification in accord with that of this paper.

In a more recent publication, Daniels[8] in 124 cases found pathologic lesions in the appendages of their immediate neighborhood in 72; in 70 cases of complicated fibromyomata lesions confined to the ovary in 28, tubes in 12, and both in 30.

Marscher[9] in 22 cases of fibromata found ectopic pregnancy in 1 and suppurative diseases of the appendages in 4.

Bond[10] reports 50 cases, in which 8 had tubal disease, which he claims was due mainly to infection from miscarriage.

Hunner[11] in a series of 100 consecutive cases occurring in Kelly's service found pyosalpinx or tubo-ovarian abscess in 6 cases, hydrosalpinx or perisalpingitis in 15 cases and ovarian cysts in 9 cases. There was found in association malignant disease in 7 cases, sarcoma 2, adenocarcinoma of the fundus 3, and squamous carcinoma of cervix in 2.

Other writers have reported smaller series of cases or series devoted to one complication as appendicitis[12] or salpingitis.[13] As these reports do not include all complications they have not been quoted.

From this summary it will be seen that the complications of fibromyomata are many and varied. It will be noted that tubal complications form a very large percentage in Daniel's series, while in the combined series they are not prominent; also in the latter series pyosalpinx is numerically greater than salpingitis. This may, I think, be explained by the fact that the earlier writers did not have a complete microscopic examination of the condition of the tubes. Frederick mentions cystic ovaries which occurred in about 14 per cent. of his cases. Mary Scharlieb estimates ovarian cysts and cystic ovaries together as 23 per cent.

In regard to associated malignant tumors in the combined series, carcinoma occupies a relatively high place. No distinction is made between "sarcomatous degeneration" of a myoma and of sarcoma associated with myoma except in Martin's paper. Of the more recent publications on sarcomatous degeneration of fibroids, Baker and Graves[14] publish 33 cases of fibroid tumors, in which 3 were sarcomatous. The percentage is truly large; but this is similar to the findings of Ulesko-Stroganowa,[15] who reported before the Russian Society for Obstetrics and Gynecology, March 22, 1902, 100 cases of fibromata with 10 cases of malignant degeneration. From the description these are evidently divided into two groups, leiomyoma malignum and true sarcoma. It is not quite clear what is meant by the former. In the discussion which followed, her views were generally opposed. From the abstract of her paper it is impossible to say how many of these were really sarcomatous.

Tate[16] and Bertha Van Hoosen[17] each report a case of sarcomatous degeneration of fibromyoma, which will be referred to later under the special heading.

From these papers it will be seen that "sarcomatous degeneration," while not common, is sufficiently so to merit further study. First, in regard to its frequency, and second, as to whether it is a true transformation of

1. Martin, A.: Centralblatt für Gynäkologie, 1888, p. 389.
2. Noble, Charles P.: The Complications and Degenerations of Fibroid Tumors of the Uterus as Bearing on the Treatment of These Growths, British Gynec. Jour., 1901, vol. xvii, p. 170. Also: A Study of the Degenerations and Complications of Fibroid Tumors of the Uterus, etc., American Gynecology, 1903, April.
3. Cullingworth, C. J.: An Analysis of One Hundred Cases of Uterine Fibromyoma, etc., Jour. Obst. and Gynec. British Empire, 1902.
4. Scharlieb, Mary: An Analysis of 100 Cases of Fibromyomata Uteri, Jour. Obst. and Gyn. British Empire, 1902, October, p. 330.
5. Frederick, C. C.: A Study of Uterine Fibromyomata with Especial Reference to Their Degeneration and Complications, etc., American Gynecology, 1902, vol. i, p. 255.
6. In this table associated tumors are arbitrarily included. Martin's 10 cases of suppuration are placed under necrosis. Noble's case of syncytioma is retained, although there is some doubt from the pathologic report as to whether there was a fibroid associated with the new growth. This tumor was twice reported. The following extract is from the second publication, pathologic report by Dr. Babcock: "In the early description of the growth it was described as a sarcomatous or endotheliomatous degeneration of a fibroid tumor; but restudy gives no evidence that fibromuscular tissue is present more than would accompany the growth of the syncytial tumor. It is believed that this is a primary syncytioma malignum in a uterus not the seat of any other tumor."
7. Noble, Charles P.: Two Cases of Deciduoma Malignum, American Jour. Obst., 1892, vol. xlvi, No. 3.
8. Daniels: Rev. Gyn. Chir. Abd., 1903, No. 112.
9. Marscher. Ueber eine ununterbrochene Reihe von 125 glücklich verlaufene Laparotomien. Centralblatt für Gynäk., 1903, No. 19, p. 576.
10. Bond, C. J.: Lancet, Jan. 17, 1903.
11. Hunner, Guy: One Hundred Cases of Fibroid Tumors, paper read before the Southern Surgical and Gynecological Society.
12. Recasens, S.: Dos casos de miomas uterinos complicados de apendicitis. Rev. de med. y cirug. pract., Madrid, 1903, lviii, p. 121.
13. Delage: Coesistence d'un fibrome de l'uterus avec cancer du col et une double salpingite suppurée, Bull. et Mem. Soc. Anat. de Paris, 1901, 63, iii, p. 341.
14. Baker and Graves: Amer. Jour. Obst., 1903, September.
15. Ulesko-Stroganowa: Ueber bösartiges Myom der Gebärmutter. Monatsschrift für Geburtschilfe und Gynäkologie, 1902, Sept., p. 427, Oct., p. 826.
16. Tate: A Case of Sarcoma of the Uterus Associated with Fibromyomata, Jour. Obst. and Gynec. British Empire, 1902, ii, 258.
17. Van Hoosen, Bertha: Sarcomatous Degeneration in Uterine Myoma, American Jour. Obst., 1903, lxii, pp. 233-236.

a myomata or merely an associated but independent growth.

MATERIAL.

The material on which this study is based[18] represents seven years' service of a general hospital (Albany Hospital), and includes all myomata removed during that time. Complete gross and microscopic examinations have been made in all cases. The series also includes 26 cases in which myomata were found at autopsies.

SUMMARY OF 280 CASES OF FIBROMYOMATA.

Character—	
Single	110
Multiple	170
Small	79
Medium	59
Large	99
Very large	43
Subserous	67
Interstitial	85
Submucous	23
Combined	105
Degenerations—	
Slight hyaline	18
Moderate hyaline	32
Marked hyaline	19
Hyaline and calcareous	8
Calcareous	14
Calcareous, necrotic, hemorrhagic	2
Cystic	8
Myxomatous	4
Hemorrhagic	6
Necrotic	4
Necrotic and hyaline	3
Necrotic cystic infected	1
Adenomyoma	6
Associated with adenocarcinoma	6
Associated with squamous cell carcinoma of cervix	2
Sarcoma	3
Deciduoma malignum	1
Complications—	
Ovarian cysts	15
Parovarian cysts	2
Cystic degeneration of ovaries	55
Tubo-ovarian cyst	1
Calcification of ovary	1
Ovarian fibroma	2
Ovarian carcinoma	2
Salpingitis	38
Salpingitis and hydrosalpinx	3
Salpingitis and tubo-ovarian abscesses	3
Pyosalpinx	5
Pyosalpinx and tubo-ovarian abscesses	2
Extra uterine pregnancy, salpingitis and hydrosalpinx	1
Hydrosalpinx	6
Hydrosalpinx and tubo-ovarian abscess	1
Autopsies—	
Total number	26
Deaths due to tumor	2

PATHOLOGY.

(*a*) *Character.*—All these variations in fibroid tumors are familiar to operators and pathologists. "Multiple" in this series is taken to mean more than one tumor. The division as to size has been based on the following scale: Small, up to 4 cm.; medium, 4 to 8 cm.; large, 8 to 16 cm.; very large, above 16 cm. in diameter. In multiple tumors the diameter of the largest tumor was taken as the determining factor. The largest tumor noted was 90 pounds, and measured roughly 50x40x20 cm. The tumor was single, showed considerable necrosis and calcareous degeneration, and caused pressure symptoms which brought on the death of the patient. It was removed postmortem. Several other tumors were noted between 40 and 50 pounds. It will be noted that 142 tumors measured more than 8 cm. in diameter.

The analysis as regards position was not easy, as it is not always plain into which of the classes a tumor should go. I regret that there is excluded a most important class of broad ligament fibromyomata, of which the data at hand would not allow a proper estimation.

By "combined" is meant multiple tumors, one each of which may be classed in one of the divisions. Thus it is seen that there are 65 multiple tumors which fall into one class (always interstitial or subserous), and 105 multiple which fall into at least two classes.

In one case of multiple fibromyomata a medium-sized fibroid has become detached from its pedicle and lay retroperitoneally being nourished by the mesenteric vessels. Similar cases have been reported by Alban Doran[19] and others.[20]

The comparative infrequency of submucous myomata is noticeable.

(*b*) *Simple Degenerations.*—In tumors of such size (142 above 8 cm. diameter) it is remarkable that a large number with degeneration, particularly with hyaline degeneration, was not met with. The combination of hyaline and calcareous degeneration in eight cases is of interest. It would seem that the tendency of the life-history of these tumors is to undergo progressive hyaline change going on to calcareous degeneration.

The 23 examples of calcareous degeneration existed in old women, one being below 50. These varied in consistence from those of the "Wombstone" type, 10 cm. across, to those with discrete, moderate calcareous deposits.

In the consideration of cystic degeneration, as Alban Doran[21] shows, a distinction should be made between true cystic degeneration and necrosis going on to cavity formation. In this series, however, his standard of judgment that a "fibroid is not truly cystic unless it includes a cavity containing half a pint of fluid," has not been adhered to, but tumors with smaller cavities have been judged as truly cystic. There were no cysts of large size found, the largest containing approximately 1,000 c.c. of fluid. Cystic degeneration is more especially interesting from the fact that of Graves' 4 cases of cystic degeneration 3 were sarcomatous, evidently a necrosis going on to cyst formation. Mary Scharlieb's series shows 6 cases of sarcomatous degeneration, and of these 3 were cystic.

(*c*) *Necrosis and Inflammation.*—All stages of inflammation and necrosis were noted. Necrosis occurred mainly in large subserous tumors, and was evidenced, on section, by brownish-yellow areas. There was usually considerable edema associated. In 4 cases this went on to liquefaction of the central area. It is interesting to note in regard to the possibility of infection that 2 cases were associated with salpingitis and 2 with hydrosalpinx. One large submucous tumor with multiple interstitial nodules was necrotic and sloughing. In all cases of sarcomatous degeneration, hemorrhage and necrosis were noted.

(*d*) *Adenomyoma.*—The percentage of these tumors is about that usually found. They offered in this series nothing of special remark in the gross appearance. One showed marked hyaline change and one calcareous degeneration.

(*e*) *Malignant Changes.*—Sarcomatous degeneration was found in 3 cases. There was no definite appearance by which these sarcomatous changes could be recognized. The main characteristics were necrosis, with broken-down areas and discolored spots from recent and old hemorrhages. A yellowish-white glistening growth could be distinguished in one case infiltrating the muscle and surrounding the necrotic areas. During the

18. I wish to express my thanks to the operators from whom these cases came, more particularly to the surgeons of the Albany Hospital. I also wish to express my gratitude to Dr. Blumer, late director of the Bender Laboratory, and to his assistants, whose conscientious routine examinations and exhaustive records have made this report possible. I also wish to express my sincere thanks to Dr. R. M. Pearce, present director of the laboratory for constant assistance and encouragement.

19. Doran, Alban H. G.: Fibroid of the Broad Ligament Associated with Ovarian Cyst, Trans. Obst. Soc. London, vol. xiii, p. 260.

20. Streeter: Amer. Jour. Obst., vol. xxi, p. 211. Also Shields Marmaduke: Trans. of Royal Chir. Soc., vol. lxxx, p. 205.

21. Doran, Alban H. G.: Fibroids of the Uterus and Its Ligaments, Lecture III, The Lancet, 1903, vol. i, No. 8, p. 497.

period from which these reports were taken, 6 cases of sarcoma of the uterus occurred, in addition to these 3 cases of sarcomatous degeneration of uterine fibroids.

In Case 1 it was possible to make a diagnosis in the gross specimen, as the disease had infiltrated the uterine tissue and gave a seminecrotic appearance with irregular hemorrhagic pinkish areas devoid of fibrous arrangement, and a shell of malignant tissue infiltrating the tumor.

Cases 2 and 3 were also necrotic, soft and friable, and in the macroscopic examination were taken for necrotic fibroids.

Chorio-epithelioma infiltrated one case of fibroid tumor. This is, so far as is known, the first authentic instance of such invasion reported. Complete reports of these four specimens from the records of Bender Laboratory follow:

CASE 1.—Mrs. M. N. Specimen consists of uterus with tubes and ovaries. One tube and ovary are separate from the rest of the specimen, the tube having been amputated at the junction with the uterus.

Uterus.—The uterus is greatly enlarged and measures 19 cm. long and about 14 cm. in diameter. Except for an irregular area about 7 cm. in diameter corresponding to the fundus, the peritoneal surface is everywhere covered with firm adhesions. Near the superior surface of the fundus are two globular tumor masses the size of a cherry, which are attached to the body of the uterus by a slender pedicle of peritoneum and fibrous connective tissue. Near the above tumor can be seen a pea-sized submucous tumor similar to the above. On section these tumors are pearly white with fine whorls of connective tissue. Adjacent to the origin of the attached tube projects a tumor mass about 3½ cm. in diameter which is soft and on section shows a thin capsule with central contents similar to that of the cavity of the uterus. On section the cavity of the uterus is found to be filled with a necrotic mass, the core of which is the size of an orange, and of a pinkish, yellow color with the consistency of liver tissue. This central mass shows whorl-like markings suggesting the cross-section of a large fibromyoma. Extending from the central core and infiltrating into the muscular coat is a stratum of extremely friable tissue from 2 to 4 cm. in thickness. This stratum is throughout semi-necrotic and shows irregular hemorrhagic areas, while at the outer border is an irregular zone which on section presents a jelly-like whitish glistening surface. The muscular coat of the uterus is under considerable tension, retracting rapidly when cut. This muscular coat has an average thickness of about 5 mm., but in many places is not over 2 mm. in thickness. The boundary between the muscular and semi-necrotic mass is nowhere sharply drawn, so that the muscular coat appears to be infiltrated by the mass lying beneath it. Near the fundus of the uterus, the muscular wall is much thicker than elsewhere. On section there is disclosed a definitely encapsulated tumor mass the size of a hen's egg which readily separates from the capsule and presents on section a soft, dark red, irregularly mottled surface. It is connected by a broad isthmus to the mass occupying the cavity of the uterus.

Tubes.—The attached tube is markedly congested, but otherwise apparently normal. Opposite tube is the same.

Ovaries.—The attached ovary is cystic throughout, having numerous cysts ranging from the size of a pigeon's egg to that of a pea, the substance of the ovary being crowded to one side. Opposite ovary shows very many cysts ranging from 2 to 10 cm. in diameter. These cysts contain clear straw-colored fluid.

Anatomic Diagnosis.—Sarcoma of uterus with necrosis and hemorrhage.

Microscopic Description.—Tissues, uterine wall, ovary, polypoid tumor described in gross description. Uterine wall: Sections taken through portion described as capsule in gross description show smooth muscle infiltrated with masses of spindle-shaped cells having large clear staining vesicular nuclei and little protoplasm. Among these cells are seen large irregular cells, the nuclei of which have a lobulated outline. Indistinct mitotic figures are seen in some of the cells. These cells have an utterly lawless arrangement, and deeper in the sections they form a continuous mass containing numerous thin walled blood vessels. Many of the sections show hemorrhagic areas with red blood corpuscles in various stages of degeneration. Some sections show simply masses of necrotic cells.

Polypoid Tumor.—Body of tumor shows smooth muscle largely replaced by fibrous tissue, while the pedicle of the tumor is seen to be infiltrated with cells similar to those described in tumor of the uterine wall.

Ovary.—Shows large follicular cysts and corpora lutea undergoing organization.

Microscopic Diagnosis.—Uterus with fibromyomata invaded by spindle-celled sarcoma; necrosis; hemorrhage; follicular cysts of ovary.

CASE 2.—Miss S. A. T. Specimen consists of an irregular mass of tissue composed of uterus and appendages and measures 18x13x7 cm. At one portion is attached a normal fallopian tube, which measures 11 cm. in length, and an ovary 1x2x2½ cm. which has undergone fibrous change. On section the irregular surface of the mass is found to be due to the presence of large, roughly spherical tumors, varying in size from 2 to 11 cm. in diameter. The original form of the uterus can not be made out. The cavity of the uterus is pale and covered with a somewhat sticky secretion. The tumor masses which lie in the myometrium, on section, have the characteristic appearance of myomata; one of the large tumor masses has undergone degeneration, is soft and friable, and contains a considerable amount of blood. Immediately beneath the serous coat are a number of small pedunculated tumor masses which average 1 cm. in diameter. On section these are similar to the large tumor masses.

Anatomic Diagnosis.—Multiple interstitial and subserous myofibromata of the uterus. Normal fallopian tube. Fibroid ovary.

Microscopic Description.—In places a definite picture of fibromyoma may be seen. Adjacent to such areas and differentiated from it only by the difference of structure, are areas of typical spindle-celled sarcoma. The sarcomatous tissue is extensively necrotic, the necrosis in places being universal, and in other places sparing the cells immediately about the vascular channels. The necrotic areas are infiltrated with leucocytes. Necrosis is seen as well in the myomatous portion, but is not so prominent.

Microscopic Diagnosis.—Fibromyoma invaded by spindle-celled sarcoma.

CASE 3.—Mrs. S. E. Specimen consists of about 25 separate pieces, which in aggregate make a mass about the size of a man's hand. One large globular mass measuring about 18 cm. in diameter makes up the bulk of the specimen. This mass presents a convex smooth surface covering about three-fifths of the mass. This surface is smooth, pale pink in color, part of surface being glistening and part of it showing firm, blood-stained connective tissue bands. The remaining periphery of this mass is exceedingly irregular and consists of various sized strips of tissue which are soft, friable and deeply stained and show numerous large blood vessels. The contents of many of the blood vessels consist of firm coagulum. These shaggy strips are distinctly necrotic and are undoubtedly further represented by the numerous small pieces of semi-necrotic material which go to make up the remainder of the specimen. The comparatively smooth surface of this mass is irregularly lobulated and shows beneath the surface a number of small cysts filled with a clear amber-colored fluid, also numerous pea-sized to cherry-sized spherical tumor masses, some of which present on cross-section a pearly white glistening surface with a whorl-like arrangement of the tissue elements. On section of the large tumor mass, the cut surface presents a thin cortex varying from 2 to 10 cm. in thickness composed of a firm, pinkish-white tissue beneath which is a whitish, coarsely granular surface showing the remains of numerous small cysts, most of which are filled with a blood-stained fluid. As one

gets farther away from smooth surface the section becomes considerably blood stained and takes on a yellowish necrotic look and the cysts become larger in size until finally the semi-necrotic shredded mass described above is reached. The small pieces accompanying this specimen consist of stringy masses of distinctly necrotic tissue similar in character to that described as occurring in the center of the large tumor mass. One of the larger pieces accompanying the specimen is thin, averaging about 1 cm. in thickness, has on smooth side considerable adipose tissue and resembles in consistency on cross-section the firm tissue described as forming the capsule in the main tumor mass. No evidence of tubes and ovaries.

Anatomic Diagnosis.—Degenerated fibroid of uterus.

Microscopic Description.—Sections through portion described as capsule of large tumor show thin layer of smooth muscle tissue with invading masses of medium-sized cells having rather darkly staining oval or spindle-shaped nuclei and little protoplasm. Many irregular mitotic figures are seen among these cells. The deeper, softer portions of the tumor are seen to be composed of solid masses of these cells. Numerous thin-walled blood vessels are seen in the cell masses. No evidences of necrosis are seen. Many blood vessels at the periphery of the tumor are completely plugged with the tumor cells. Sections through nodular masses at surface of tumor show smooth muscle tissue rich in cells and a moderate amount of fibrous tissue.

Microscopic Diagnosis.—Myoma of uterus invaded by spindle-celled sarcoma.

CASE 4.—Mrs. C. R. Specimen consists of an enlarged uterus measuring 11x6x5 cm. Peritoneal surface is smooth. The Walls are for the most part normal. At one point there is a typical myoma one centimeter in diameter, with a hemorrhagic center. Springing from the mucous membrane there are a number of cauliflower-like excrescences over areas varying from 1 to 2 cm. in diameter. These project .5 cm. above the surface of the mucosa, some of them ulcerated, covered by little papillary projections and distinctly hemorrhagic. On section they appear to be part of the new growth which extends down into the uterine musculature. This growth is for the most part distinctly hemorrhagic, though in one or two places of a homogeneous white color. In the uterine musculature of the fundus is a small cavity, about a centimeter in diameter, into which projects a number of pinhead-sized, congested, papillary excrescences.

Anatomic Diagnosis.—Adenocarcinoma of the uterus (?). Small interstitial myoma.

Microscopic Description.—Section presents a small piece of typical fibromyoma, at one side of which is a large hemorrhagic mass. The line of separation and blood clot is not distinct. The adjacent portion of tumor shows some lymphocytic infiltration. This hemorrhagic mass shows throughout some necrotic tissue with irregular strands and masses of syncytial tissue composed of cells with a large amount of protoplasm and large deeply staining nuclei. The outlines of these cells are not always distinct owing to the fusing of their protoplasm. The syncytial cells are found everywhere in the midst of hemorrhage. The necrotic tissue is moderately infiltrated with leucocytes. The nuclei of the large cells are often irregularly stained, sometimes are so arranged as to give the appearance of giant cells. These masses are in direct continuity with the myoma; in several places a distinct invasion is evident.

Microscopic Diagnosis.—Fibromyoma of the uterus infiltrated with chorio-epithelioma.

(*f*) *Relation to Cancer.*—Adenocarcinoma of the fundus was associated with fibroid tumor in six cases, in two of which the fibroid was infiltrated by the carcinomatous tissue. In five of these cases the uterus was the host of interstitial fibroids of small or medium size. When the relative frequency of adenocarcinoma and squamous carcinoma is considered, it will be seen that we have here a much higher percentage of adenocarcinoma than is found in the usual run of cancer cases complicated and uncomplicated by fibroids. This agrees with Martin's estimation.

Squamous carcinoma of the cervix occurred in two cases. In both cases the fibromata were interstitial and very small.

In view of the relative frequency of adenocarcinoma and fibromata of the uterus, it would seem that the association of the two are worthy of consideration. If the percentage of fibroids at autopsies, 14.8 per cent. (*v. infra*), be taken as an approximate ratio of their occurrence, it seems at least that while the association of squamous carcinoma with fibroids is accidental, the occurrence of adenocarcinoma may be more or less influenced by the presence of fibroid tumors. In this connection statistics compiled from the records of institutions having large series of cases and autopsy reports would be of value.

(*g*) *Complications.*—(1) Ovarian cysts occurred in 13 cases and varied in size from 6 to 12 cm. in diameter, but one was of the papillomatous type. Seven of these cases were additionally complicated by salpingitis.

The two parovarian cysts were of moderate size, about 6 to 8 cm. in diameter. One tubo-ovarian cyst existed, and was of moderate size.

The ovarian fibromata measured 8x7x4.5 and 20x11x10 cm., respectively. The latter was associated with a very small interstitial fibroma of the uterus. Of the two cases of carcinoma of the ovary, one was bilateral, and in both instances the growths were due to metastases from a tumor of the breast.

Cystic ovaries (one or both) in 55 cases (20 per cent.) may seem to be a large percentage, but compares very closely with Scharlieb's[4] estimation of this complication. These are due, it is thought, to the undue thickness or toughness of the ovarian boundaries. There is in almost all these ovaries an increase in the amount of fibrous tissue.

(2) *Tubal Complications.*—The tubes were diseased in 60 cases; of these 38 were salpingitis alone. In several cases the gross change was slight and the diagnosis made microscopically. In 12 cases there was pus in the appendages in the form of pyosalpinx or tubo-ovarian abscess. There were also 11 cases of hydrosalpinx, of which 5 were additionally complicated by salpingitis, tubo-ovarian abscess or ectopic pregnancy. One case combines all three—ectopic pregnancy, salpingitis and hydrosalpinx.

(3) It will thus be seen that the ovaries, tubes and adjacent neighborhood were diseased in a large number of cases. Alban Doran states that his experience is more like that of Cullingworth, who found no disease in the appendages save 5 cases of hydrosalpinx in 100 fibroids. Lawson Tate and Twambly,[22] on the other hand, imply that this condition exists in 50 per cent. of all cases of fibroids. Daniels (*v. supra*) found disease of the appendages in 58 per cent. of his cases. In this series (including 55 cases of cystic ovaries) the appendages showed disease in 137 cases, or 49 per cent. In addition to these cases there were many cases in which the remains of adhesions were noted, but as it was obviously impossible to estimate this with exactness, without description of the appearance *in situ* at the time of operation, this complication has not been noted.

(*h*) *Myomata in Routine Autopsy Work.*—On examination the records (Bender Laboratory) of autopsies

22. Bishop, Stanmore: Uterine Fibromyomata, p. 49.

on women show that fibromyoma of the uterus was found in 26. In two cases apparently death was indirectly caused by the tumor. To what extent the intercurrent disease, which was the cause of death in other cases, was hastened in its course by the associated fibroids, can not be deducted. The tumors were large in 3 (greater than 8 cm. diameter); small in 20 cases (less than 4 cm. diameter), of these last 10 were single and 10 multiple. The ages at which these patients died in decennial periods were as follows: Under 35, three; between 35 and 45, six; between 45 and 55, six; between 55 and 65, six; between 65 and 75, four; above 75, one. The youngest was 28; the eldest 78. The influence of the tumor was apparent in one case in which death was due to anemia and nephritis; a large submucous tumor by pressure had caused hydroureter and uterine hemorrhages. In a second case a large fibroid tumor of 90 pounds by pressure had caused hydroureter and various congestion with edema of lungs. In this case the weight of the woman less the tumor was 65 pounds. The other cases, which were probably influenced by the fibroid tumor, are deaths from pyonephrosis, pyelitis, rupture of bladder and acute peritonitis. Bishop[23] has collected 37 fatal cases of fibromyomata.

Of the 20 small tumors, one was complicated by tubo-ovarian cyst and hydrosalpinx. Four were associated with adhesions, and one with carcinoma of the ovary secondary to mammary cancer.

Of the medium-sized tumors, of which there were three, one was associated with bilateral pyosalpinx which had caused a general peritonitis. The tumors in this case were three in number and interstitial.

The total number of autopsies done on women over 20 years of age during the seven years in which these autopsy reports were collected amounted to 175. So that of all adult women coming to autopsy, 14.8 per cent., or one in every seven, had uterine fibroids. From this it may be seen that small fibroids of the uterus may cause little or no disturbance, and that many of these tumors cause no symptoms and are not discovered during life. The danger of these growths, apart from submucous tumors, is due to their complications, and while these may not always endanger life, it is evident that they frequently cause sufficient disturbance to produce alterations in the surrounding tissues, as is shown by the presence of adhesions, etc.

RELATION OF PATHOLOGIC CHANGES TO TREATMENT.

In conclusion, what deductions can be drawn from this series? So much has been written by men of wider experience that it would be a work of supererogation to add to their well-debated advice. But there are a few questions to be considered:

First, in regard to the advice we must give to a patient suffering from fibroid. It is well understood that the operation for fibroids, in the hands of capable operators, is in uncomplicated cases practically devoid of danger. It is to complications and degenerations that mortality in fibroid tumors is due, as we know from experience and from published reports. Delay in an uncomplicated fibroid exposes the patient to the possibility of the development of complications. And with the large percentage of complications in this series it is evident that with delay the liability to complication is increased. While this is so, it is evident that there is one class of fibroids which may cause few or no symptoms, viz., the small subserous and interstitial tumors. We may, therefore, say that delay is justifiable only in these latter cases and not justifiable in even these when complications exist.

In reference to the extent of operation, while it is obvious that myomectomy is the ideal operation, there is no doubt that it is only applicable to a small class of cases—those in which the tumors are easily accessible and in which it is possible to eradicate them completely. If eradication is not complete, there is the possibility of renewed growth, and should pregnancy occur, with its increased blood supply, this possibility is the greater. This should be kept in mind, as those cases in which myomectomy is desirable are usually childless women.

It is at present accepted that the operation of supravaginal hysteromyomectomy[24] is accompanied by the lowest mortality.[25] But this operation is obviously not applicable to those cases with malignant degeneration and associated with malignant disease of the uterus. Such cases demand complete extirpation of the cervix. Should, however, the commonly accepted operation of supravaginal hysteromyomectomy be attempted, and on opening the uterus adenocarcinoma or suspicious necrotic change be seen, the cervix may be removed and a complete ablation done.[26]

Adenocarcinoma and sarcoma are the forms of malignancy which, in connection with fibroids, are most likely to come to operation unrecognized. If, however, the case be uncomplicated by malignancy, the choice must lie between amputation through the cervix and myomectomy. It is rarely advisable to do myomectomy when the appendages are adherent or in the presence of old or recent infection. The site of enucleation may become the starting point for a peritonitis.[27] In view of the large percentage (21.4) of diseased tubes, it is evident that myomectomy is limited to a small class of cases.

Should amputation through the cervix be the operation of choice, one or both ovaries may be left to ameliorate the symptoms of the surgical menopause. In such case not only must the question of infection from the tubes be considered, but also the condition of the ovary to be left. In a large percentage of this series cystic ovaries were found. A cystic ovary should not be left; if necessary, resection may be done and the cysts removed.

CONCLUSIONS.

1. Fibroids which are producing symptoms, and all fibroids except those designated as small (especially when subserous or intramural), should be removed, because the risk to the patient from operation is far less than that from the tumors themselves.

2. In view of the sarcomatous changes, carcinomatous associations and complications of uterine fibromyomata, early removal is indicated when they are of sufficient size to produce symptoms. Small uncomplicated tumors not producing symptoms do not require early treatment.

3. Thorough pathologic examination should be made of all fibroids for evidence of malignancy. Particular study should be devoted to those tumors which are necrotic, cystic or both, as among these are found the largest proportion of malignant changes.

23. Bishop, Stanmore: Uterine Fibromyomata, 1901, pp. 27-31.

24. Wells: Surgical Treatment of Fibroids, Amer. Jour. Obst., vol. xlvii, p. 305.

25. Henricius: Archiv für Gynäkologie, vol. lxvii, No. 2.

26. Bland-Sutton: Trans. Obst. Soc., 1901, vol. xliii, p. 200.

27. Cullen, T. R.: Sarcomatous Transformation of Myoma, Discussion, THE JOURNAL A. M. A., 1903, Oct. 24, p. 1015.

THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.*

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When I addressed the British Gynecological Society[1] in 1901 on the subject, "The Complications and Degenerations of Fibroid Tumors of the Uterus as Bearing on the Treatment of These Growths," reporting 218 cases, it was with the purpose of pointing out that, in my judgment, the profession had not had a proper estimate of the natural history, degenerations, complications and dangers of fibroid tumors. At that time no one had considered this subject from the standpoint in question. Martin, 1888, had written a paper[2] reporting the degenerations in the tumors themselves, but ignoring the complications which existed in the particular cases reported. But from 1888 until 1901 the literature shows that no special attention had been paid to this subject, and that the complications of fibroid tumors had attracted practically no attention whatever. It can not be otherwise than gratifying to me that following my own paper on the subject there have been a number of very valuable and careful reports of the individual experience of other surgeons in this field. This is particularly true of the papers of Cullingworth,[3] Frederick,[4] Scharlieb[5] and Hunner.[6]

The conclusions of my paper[7] of 1903, reporting 258 cases of fibroid tumor, were as follows: It was estimated that because of the degenerations present, 16 per cent. of the patients would have died without operation, and that because of the complications present, 18 per cent. would have died without operation, or a total of 34 per cent. In addition to this a certain number of the patients would have died from intercurrent diseases contracted because of the reduced state of health of the patient; in other words, that more than one-third of the women having fibroid tumors which had come under my observation would have died had they not been submitted to operation.

At this date (Jan. 31, 1904) I have operated on 278 patients having fibroid tumors of the uterus. A table of the complications and degenerations encountered in these cases follows. In 180 cases complications or degenerations were present, and in 98 cases no degenerations or complications were recorded. There is no doubt that a good many of the simpler complications and degenerations were not recorded, more especially in the early work. This applies more particularly to edema and to myxomatous degeneration of the tumors. These cases were looked on at that time as instances of soft fibroids, and no note was made of their pathologic condition.

COMPLICATIONS AND DEGENERATIONS OF FIBROID TUMORS COMPLETED TO JAN. 31, 1904.

Celiotomies	235
Vaginal hysterectomies	7
Vaginal myomectomies	36
Total	278
Adenocarcinoma of body of uterus	6
Epithelioma of cervix uteri	4
Epitheliomatous infiltration of fibroid tumor arising from adenocarcinoma of corpus uteri by metaplasia	1
Sarcoma	2
Chorioepithelioma	1
Myxomatous degeneration of tumor	8
Cystic degeneration of tumor	7
Calcareous infiltration of tumor	6
Necrosis of tumor	18
Twisted pedicle, pedunculated tumor	2
Intraligamentous development of fibroid	19
Procidentia of uterus	5
Retroversion of uterus	4
Papillary carcinoma of both ovaries	1
Ectopic pregnancy	3
Dermoid cyst, bilateral; umbilical hernia	1
Dermoid cyst, suppurating sinus through abdominal wall	1
Dermoid cyst with twisted pedicle	1
Dermoid cyst	1
Ovarian cyst with twisted pedicle	1
Ovarian cyst, suppurating	1
Ovarian cyst, bilateral	2
Ovarian cyst, unilateral	22
Cystic degeneration of ovaries	5
Abscess of ovary	1
Parovarian cyst	2
Pyosalpinx, bilateral	9
Pyosalpinx, unilateral	4
Hematosalpinx	1
Hydrosalpinx, bilateral	10
Hydrosalpinx, unilateral	8
Salpingitis, bilateral	2
Salpingitis, unilateral	10
Abscess of broad ligament	1
Appendicitis	10
Total	180

It is interesting to compare my own series of cases with that reported by Dr. McDonald.[8] Of his series of 280 cases there were:

Chorioepithelioma	1
Sarcoma	3
Squamous cell carcinoma of cervix	2
Adenocarcinoma	6
Necrotic, cystic, infected	1
Necrotic and hyaline	3
Necrotic	4
Cystic	8
Calcareous, necrotic, hemorrhagic	2

This makes a total of 30 patients who undoubtedly would have died without operation. It is equally certain that a considerable number of the patients having other degenerations would have died.

Of the complications there were:

Ovarian cysts	15
Tubo-ovarian cysts	1
Ovarian carcinoma	2
Salpingitis and tubo-ovarian abscess	3
Pyosalpinx	5
Extra-uterine pregnancy, salpingitis and hydrosalpinx	1

* Read to open the discussion on Dr. McDonald's paper, which precedes.

1. Noble, Chas. P.: British Gynec. Jour., 1901, vol. xvii, No. 67, p. 170: Amer. Jour. Obst., 1901, vol. xliv, No. 3, p. 289.

2. Martin, A.: Centralblatt für Gynäkologie, 1888, p. 389.

3. Cullingworth, C. J.: An Analysis of One Hundred Cases of Uterine Fibromyoma, in Which the Condition of the Tumors and the Complications to Which They Had Given Rise Were Verified by Operation, Jour. Obst. and Gynec. British Empire, 1902, vol. i.

4. Frederick, C. C.: A Study of Uterine Fibromyomata, with Especial Reference to Their Degenerations and Complications as Furnishing Reasons for Early Operations, Amer. Gynec., 1902, vol. i, p. 255.

5. The following tables from the article by Dr. Mary Scharlieb were received too late for incorporation in the paper, and are published as a footnote for the information of the reader. (An Analysis of One Hundred Cases of Fibromyomata Uteri, Jour. Obst. and Gynec., British Empire, 1902, vol. ii, p. 323.)

DEGENERATIONS OF FIBROID TUMORS IN 100 CONSECUTIVE CASES.

Edematous and myxomatous	5
Sarcomatous	6
Cystic or fibrocystic	7
Calcareous	2
Necrotic, infected	2
Sloughing	3
Carcinomatous invasion	1
	26

COMPLICATIONS OF FIBROID TUMORS IN 100 CONSECUTIVE CASES.

Cyst or cystomata of one ovary or both ovaries	23
Broad ligament cysts	2
Thrombosis of veins of lower extremity before operation	2
Varicose veins of pelvis	4
Hydrosalpinx	4
Pyosalpinx, double	1
Fibroma of fallopian tube	1
Papillomata of the appendages	1
Adhesions to viscera	6
Adhesions of tumors	5
Pregnancy	1
Inflammation of appendix	1
	51

6. Hunner, Guy L.: One Hundred Consecutive Cases of Myoma of the Uterus, Amer. Medicine, 1903, vol. vi, No. 2, pp. 55-57.

7. Noble, Chas. A.: A Study of the Degenerations and Complications of Fibroid Tumors of the Uterus from the Standpoint of the Treatment of These Growths, Amer. Gynec., 1903, April.

8. McDonald, Ellice: Complications and Degenerations of Uterine Fibromyomata. See p. 1344, this issue.

This is a total of 29 that would have died without operation, giving a mortality of 59 in 280 cases, or 21 per cent. This does not include the mortality which would follow the various degenerations not classed as fatal, nor the various complications not necessarily fatal. When these are added, it would bring the mortality in Dr. McDonald's series approximately to that in my own and to that in Frederick's and Cullingworth's.

As illustrating the way these cases run: Since September 15 I have operated on 13 cases, the complications of which are as follows:

1. Salpingitis, submucous fibroid previously removed.
2. Uncomplicated.
3. Adenomyoma.
4. Uncomplicated.
5. Uncomplicated.
6. Calcareous infiltration.
7. Uncomplicated.
8. Left hydrosalpinx, right salpingitis.
9. Bilateral pyosalpinx.
10. Adenocarcinoma of body of uterus.
11. Necrotic tumor, adenocarcinoma of body of uterus.
12. Abscess of broad ligament, bilateral salpingitis.
13. Submucous fibroid, sloughing.

This group of cases occurring in three months and a half illustrates the erroneous nature of the old view concerning the innocence of fibroid tumors. Or, to put the matter in a more correct way, it illustrates the fact that women having fibroid tumors are, as a rule, sick women, who have not only fibroid tumors, but other conditions, the complications often being even more serious than the tumors themselves.

Dr. McDonald's tables, those of Cullingworth, Frederick and my own, show the folly of the classical view that women having fibroid tumors of the uterus, as they come under the observation of the gynecologist, are practically well women, suffering but few or no symptoms, and running but little risk as to their health or as to their life. It is begging the question to change the classification and to assert that these women are sick merely because of the complications. The change in classification does not alter the fact that the women having the fibroid tumors, as they come under observation, are usually sick women. As I have presented this subject before several medical bodies already, I am aware of the objections to the point of view which I hold, and of the statements and arguments of those who claim to be conservative (using the term in its debased instead of its primary sense) in the treatment of fibroid tumors. As a matter of fact, I believe that these men operate on these cases with cheerful alacrity, but base the indication for operation on the particular complication which may be present. Many of the complications, so far as concern their risks to health or to life, are trifling as compared to the risks of a fibroid tumor. For example, such complications as a parovarian cyst, a retroversion of the uterus with or without adhesions, or cases of appendicitis which have recovered from the acute attack (the so-called interval operation). Every surgeon operates on such cases, although the gravity of the lesions is trifling as compared with the gravity of a fibroid tumor. Patients in whom the tumors are not complicated by other conditions are operated on, as alleged, because of the symptoms which are present—hemorrhage, pain, the presence of a tumor, pressure on the urinary organs or on the alimentary canal, etc. For example, in my table of 278 cases, 180 would be operated on because of the complications present, and the remaining 98 would be operated on because of hemorrhage, pain, the presence of the tumor or pressure on the urinary organs or on the alimentary canal. That is to say, the form of words used in stating the indication for operation does not alter the fact that these cases are operated on by surgeons and gynecologists at the present time as a routine matter of practice.[9]

Another point to which I wish to call special attention is the relation of fibroid tumors to malignant degeneration and especially to adenocarcinoma of the body of the uterus. In Martin's group of 205 cases there were reported:

Sarcoma of tumor	6
Carcinoma of cervix uteri	2
Carcinoma of corpus uteri	7

9. Although the position I have taken, with reference to the nature of the indications for operation for fibroid tumors in the various contributions which I have made to the subject, seems to me entirely clear, those who maintain the classical or traditional attitude in their public discussions on the subject have constantly confused it or failed to appreciate it. In order that there may be no doubt about the matter I shall state it in formal terms. The carefully gathered facts with reference to the life history, the degenerations and the complications of fibroid tumors which are presented in this paper, and have been presented in the previous papers, show that about 16 per cent. of women having fibroid tumors would die if not operated on because of the degenerations and complications arising in the tumor or in the uterus; in other words, that the women having fibroid tumors run a far greater risk of losing their lives by not having them operated on than by submitting themselves to operation. In addition it has been shown that women having fibroid tumors as they present themselves to the gynecologist have, in addition to the tumor itself, many complications outside of the tumor and the uterus. Of the women having fibroid tumors, who have come under my observation, about 18 per cent. would have died without operation because of the complications outside of the tumor and the uterus. This state of facts forms a secondary but an additional reason for operating on women having fibroid tumors, taking them as a class. Taking them as a whole, at least one-third of the women having fibroid tumors, who have come under my observation, would have died had they not been operated on. I hold that the scientific position in reference to the indication for fibroid tumors is that as these facts are incontrovertible—being based on careful clinical and pathologic investigation—that the indication for operation should be based on these facts and not on any particular symptom which may be present at the time the woman comes under observation. My position is distinctly in opposition to that which may be called the classical or traditional position, which is, that the operation to remove a fibroid tumor should be done because of the symptoms it is producing at the time the patient presents herself for treatment—whether this be hemorrhage or pain or pressure on the urinary organs, or on the alimentary canal, or whether it is a state of the mind arising in the woman because of her knowledge of the existence of the tumor. Nothing is more variable than symptoms, which can frequently, and indeed, usually, be removed by appropriate treatment. Indeed, the state of the case is even worse than this, for most symptoms it is necessary to take the patient's statement. On the other hand, nothing is more definite than physical facts and pathologic findings. When the two positions are placed in opposition it seems to me there can be no question as to which is the correct one and which should be accepted by the profession. To speak by analogy, a fibroid tumor should be removed for the same reason that an ovarian tumor should be removed; the indication varying in degree, but not in kind. Ovarian tumors are removed, irrespective of the symptoms they are producing, because of our knowledge of the life history of these growths, which is, that if left to pursue their usual development a fatal result will occur in almost all cases. Similarly, fibroid tumors should be removed, because if left to pursue their usual development, at least in one-third of the cases a fatal result will occur.

For those who are convinced that the classical position is correct, I would suggest that one of the strongest arguments that could be produced in support of their position would be to institute a careful research into the autopsy records of well managed institutions in order to learn, first, in what proportion of women fibroid tumors are found at autopsy, and second, what relation these tumors had to the state of health or to the death of the particular patients. It is a classical statement that many women live and die without the knowledge that they have had fibroid tumors. This statement I do not believe, but I would be quite willing to be convinced of its truth on adequate evidence.

It has also been suggested to me that being a gynecologist with a consulting practice, my experience with reference to fibroid tumors is an exceptional one, and that the experience of the family physician is quite different; the difference being that fibroid tumors as he sees them are producing much less mischief than is the case in my experience. At first sight this seems possibly to be a plausible statement. However, I was at one time a family physician myself, and for ten years I had a large experience as attending physician to various dispensaries for the diseases of women, in both of which positions my experience would naturally be the same as that of the family physician. Comparing that experience with that of the present I am able to see no difference whatever; therefore, it is my belief that while this statement sounds plausible, it is incorrect.

In my own experience (278 cases) there have been encountered:

Chorioepithelioma	1
Sarcoma	2
Epithelioma of cervix uteri	4
Adenocarcinoma of the corpus uteri	6

In Frederick's paper, including a series of 125 cases of fibroids, there were:

Sarcoma	2
Epithelioma of cervix uteri	2
Carcinoma of endometrium and body	6

In Dr. Cullingworth's paper, being a series of 100 cases, there was:

Myxosarcoma	1

Dr. McDonald reports a series of 280 cases in which there were:

Chorioepithelioma	1
Sarcoma	3
Squamous cell carcinoma of cervix uteri	2
Adenocarcinoma of corpus uteri	6

This gives a total of 988 cases, in which occurred:

Chorioepithelioma	2
Sarcoma	14
Carcinoma of cervix uteri	10
Carcinoma of corpus uteri	25

It is at once apparent that the adenocarcinomata of the body are much more common in cases of fibroid tumors than are the epitheliomata of the cervix, whereas in general, epithelioma of the cervix is far more common than adenocarcinoma of the body. The usual ratio between epithelioma of the cervix and adenocarcinoma of the corpus of the uterus is as one to three, or four. (Cullen[10] gives 123 cases of squamous cell carcinoma of cervix, 18 cases of adenocarcinoma of cervix, and 35 cases of adenocarcinoma of the body of the uterus.)

The natural conclusion to be drawn from so large a series of cases is that there is a direct causative relation between fibroid tumors and the development of carcinoma of the body of the uterus.

Dr. McDonald states that small fibroid tumors, especially the subserous and intramural fibroids, do not require early operation. From my standpoint this is the only group of fibroids in which this question is debatable. In all other classes certainly, with the knowledge before us at the present time, patients having fibroid tumors should have them removed. With reference to the small tumors which are subserous or intramural, undoubtedly if there is any class of fibroids which do not require removal, it is this group.

The facts drawn from the large series of cases which I have reported not only from my own experience, but from that of Martin,[11] Cullingworth,[3] Frederick,[4] and now from Dr. McDonald's paper[8] (988 cases), make it more than doubtful whether it is conservative (in the primary sense of the word) to advise against the removal of a fibroid tumor in any instance, unless in the particular case there is some good reason, owing to disease in other organs of the body, why an operation would be especially hazardous. An analysis of the various series of reported cases shows the following facts:

	Per cent.
Sarcoma developed in	1.5
Adenocarcinoma of the corpus uteri developed in	2.5
Carcinoma of the cervix developed in	1.0
Necrosis of the tumor occurred in	6.1
Cystic degeneration occurred in	3.4

These facts are incontrovertible; and when added to the probability of the continued growth of the tumor in any special instance and to the probability of various complications arising outside of the tumor and of the uterus, it seems to me clear that anyone having an open mind must be convinced that the conditions surrounding any particular instance of fibroid tumor of the uterus must be exceptional for it to be less dangerous for a woman to retain her tumor than to have it removed by a competent gynecologist.

At the same time, so great is the influence of tradition and so difficult is it to change one's habits of thought, that in this particular group, in spite of my convictions, I have been in the habit of advising expectant treatment. In the not distant future, however, it seems to me very probable that in this group of cases also patients will be advised to have the tumors removed, unless in a particular case there is some good reason to the contrary. It is the general rule in surgery that a tumor when present in the body should be removed, and this is as applicable to fibroid tumors of the uterus as to other tumors.

The evidence which is now available proves conclusively that over one-third of the women having fibroid tumors will die unless the tumors are removed; that the risk of radical operation in uncomplicated cases is very small—probably 1 or 2 per cent.; that in the average of cases, in good hands, it is about 5 per cent., rising to 10, 20 or 30 per cent. in the gravely complicated cases; that, therefore, on the main proposition there is no question but that fibroid tumors should be removed. The debatable ground is whether or not to remove small fibroid tumors, especially when subserous or intramural.

10. Cullen, Thomas S.: Cancer of the Uterus, New York, 1900.
11. Martin, A.: Pathology and Therapeutics of the Diseases of Women, Boston, 1900, pp. 268-272.

Special Article.

THE ARMY MEDICAL DEPARTMENT.

III.

A HISTORICAL SKETCH.

(*Continued from page 1288.*)

The admirable medical organization of Letterman disappeared with the armies of Grant and Sherman, and Congress, weary of war, could not be induced to take interest in any military matter, except in the direction of reduction and economy. While all other nations made haste to apply the lessons of our war and to remodel their medical organizations in accordance with them, our own Medical Department reverted to antebellum conditions and went backward. The hospital stewards were the only permanent enlisted personnel and all nursing and other work about the hospitals was done by an uninstructed and constantly changing personnel of men detailed from the companies.

No worse system could have been invented, and yet it lasted 22 years, until, in 1887, the first step toward a modern organization was made by the establishment of a hospital corps, consisting of privates and two grades of non-commissioned officers. The medical officers then began the systematic training of the personnel and the study of modern medical organization with a view to war conditions. This movement unfortunately was misunderstood by the officers of the line and met, especially at first, with much ridicule and covert opposition, the use of military titles by medical officers being especially resented. In 1892 the Army Medical School was established in Washington for the instruction of young medical officers in hygiene, medical administration and other branches of special importance in military medicine. The influence for good of this school has been already marked and is constantly widening, and now that the course has been thrown open by act of Congress to offi-

cers of the organized militia, it needs only larger accommodations in the way of class rooms to become an institution of national importance.

The outbreak of the Spanish War in 1898 found the Medical Department with a personnel of 177 commissioned officers and 750 enlisted men. This number was barely sufficient to perform the medical service of the regular army of 25,000 men in time of peace. When a volunteer army of 250,000 men was mobilized, and at the same time an expedition embracing practically the entire regular army was organized to attack Santiago, it was immediately evident that if the regular regiments were to be cared for by regular medical officers but few would be left to organize the medical service of the volunteer armies. Each of the volunteer regiments brought with it into service three regimental surgeons and three hospital stewards, but no privates. The regimental and field hospitals had to be organized at the expense of this regimental medical personnel. The enlisted strength of the regular hospital corps was inadequate for 25,000 men, and as Congress failed to authorize the enlistment of volunteer Hospital Corps men, the situation in this respect became at once acute, and was only partially relieved by the clumsy expedient of authorizing the transfer of men from volunteer regiments to the regular Hospital Corps. The volunteer surgeons, though in many cases appointed without effective examinations, were, as a rule, capable and efficient physicians, but were lacking in administrative experience, and in practical knowledge of military hygiene. The troops were, in most cases, kept for long periods of time in their camps of mobilization and so the typhoid infection, which almost every regiment brought with it from its state camp, had good opportunities for dissemination.

The typhoid epidemic which swept through these camps is a recent and painful memory, but it is by no means certain, in spite of the remarkable study of these epidemics to be found in the report of Reed, Vaughan and Shakespeare, that the lessons of 1898 have been taken to heart by either the medical or the military profession, or that a reassembling of large bodies of troops would not be followed by a recurrence of these experiences.

The military and sanitary lessons of this war are most instructive and should not be lost. Fortunately they have been studied with much care and patience and every facility for arriving at the truth by a commission appointed by President McKinley to investigate the conduct of the War Department in the war with Spain, commonly known as the Dodge Commission,[1] from the name of its chairman. Their conclusions were:

What is needed by the Medical Department in the future is:

1. A larger force of commissioned medical officers.

2. Authority to establish in time of war a proper volunteer hospital corps.

3. A reserve corps of selected trained women nurses, ready to serve when necessity shall arise, but, under ordinary circumstances, owing no duty to the War Department, except to report residence at determined intervals.

4. A year's supply for an army of at least four times the actual strength, of all such medicines, hospital furniture, and stores as are not materially damaged by keeping, to be held constantly on hand in the medical supply depots.

5. The charge of transportation to such an extent as will secure prompt shipment and ready delivery of all medical supplies.

6. The simplification of administrative "paper work," so that medical officers may be able to more thoroughly discharge their sanitary and strictly medical duties.

7. The securing of such legislation as will authorize all surgeons in medical charge of troops, hospitals, transports, trains and independent commands to draw from the Subsistence Department funds for the purchase of such articles of diet as may be necessary to the proper treatment of soldiers too sick to use the army ration. This to take the place of all commutation of rations of the sick now authorized.

To these should be added the creation of a corps of medical inspectors with adequate rank and powers.

In the reorganization of the Army by the Act of Feb. 2, 1901, no attention was paid to the recommendations of this commission or to those of the surgeon general, and the proportion of medical officers was not only not increased but was greatly reduced, while their prospect of promotion was taken away by disproportionate increase in the lower grades. The defects of this reorganization have been recently recognized by the War Department, and a bill is now before Congress, approved by both the former and the present secretary, for their correction. It will be the duty of the General Staff to secure legislation to carry out the second recommendation and to make such arrangements with the Quartermaster's Department as will secure the fifth. The third has already been provided for and the surgeon general's office is making it a part of its policy to purchase each year, as appropriations permit, the accumulation of supplies suggested in recommendation four. The sixth recommendation is now being considered by a board which will also get up a book of forms which will explain clearly to the uninitiated the preparation of all reports and returns. The seventh recommendation has been already carried out.

The profession has learned that in military camps typhoid fever is certain to appear, and that it is not always, or even most usually, an infected water supply which is responsible for its spread, but that in the Spanish War flies conveyed the infection from latrines to food, and it was also spread in many cases by infected hands, clothes and tent flaps. It has also been learned that in the United States a continued fever which does not readily yield to quinin is in the great majority of cases typhoid fever. But there are other lessons of that war which must be unlearned and precedents which must be forgotten. The great camps of mobilization for the volunteer forces were sedentary commands, and the regimental and field hospitals never learned the limitations imposed by mobility and the question of transportation. No stationary or base hospitals were at first provided near these great camps to receive the seriously ill, and so the field hospitals, and later even the regimental hospitals, were immobilized and anchored down by typhoid cases, and by a great mass of paraphernalia which, while very proper for the care of such cases, was utterly out of place in organizations supposed to be mobile, and to only afford the sick and wounded temporary shelter until they can be sent back to a stationary or base hospital.

With this misconception of the use of the regimental and field hospital has arisen an elaborate equipment which has even been recognized in the medical supply table, with sheets which there is no way of washing, and furniture which can rarely be transported. These should be reserved for the stationary or base hospitals. The true rôle and equipment of the field hospital is admirably described in the words of the late Col. Dallas Bache, assistant surgeon general:

1. The medical member of this commission was Dr. Phineas S. Connor of Cincinnati.

The division hospital, which is the logical unit for medical field service, and will survive the new criticism, has created for itself a picturesque reputation that is destined to make trouble. It has frames, floors, wire mattresses, much bedding, and many conveniences. The hospital of experience is a lean, though active thing, by the side of this opulent hotel. It is for nimble service, and often stripped to the simplest necessities, waterproofs, blankets, and a chance concession for empty bed sacks. It must often ignore tables of supply; it can not afford a superfluous ounce of flesh or anything else. Its transportation must go for its canvas, stores, clothing, utensils, and tools. Its intent is to cover barely, to receive the sick and wounded, but not to harbor them long; to be ready at an hour's notice to move. Furniture would be as impossible as melodeons or lawn mowers. Such a hospital must be manned. Its personnel are soldiers first, and nurses afterward; for it is for hard service, and meant for fatigue, privation, weathers and confusion. It may be idle sometimes, and acquire Spartan luxuries, but nothing but some overwhelming misery of the sick should intrude an unaccustomed and alien attendance.

May we hope that among the lessons of the Spanish War we may count this one, that the regimental and field hospitals are not the places for the treatment of typhoid cases or broken thighs, or for the best use of trained nurses.

Meanwhile questions of medical organization for war, which have, since the days of the Civil War, been in a condition of nebulous uncertainty, will in due time come before the General Staff for careful and systematic study, and although that body has, by a curious anomaly, no medical representative on it, it is probable that this defect will in time be remedied, and that the medical officer of the future will enjoy the heretofore unknown privilege of knowing beforehand what is to be the medical organization for the next war.

(To be continued.)

Clinical Reports.

EXTENSIVE PANCREATIC NECROSIS WITH RECOVERY.

J. F. BALDWIN, M.D.
Surgeon to Grant Hospital.
COLUMBUS, OHIO.

Introduction.—At this time, when the attention of the profession is directed so earnestly to the pancreas, the report of the following case, with the lessons to be derived from it, can not fail to be of much interest.

History.—W. J. G., a practicing physician of Columbus, Ohio, aged 52, had always enjoyed good health until the latter part of August, 1903. About thirty years before he had had some symptoms which led him to suspect the presence of gallstones, but he had been entirely free from the symptoms until six or eight years ago, when he became subject to occasional brief attacks of "indigestion." In August, after eating some ice cream, he had an attack of acute indigestion, with severe pain, vomiting, etc. More or less trouble in the region of the stomach persisted after that time, with several attacks similar to the one in August. During these attacks he vomited freely, and eructated a good deal of gas. The vomited material was never characteristic. Pain and soreness were at times present, which he referred to the pit of the stomach, the pain extending into the right shoulder. There was never any jaundice.

Present Condition.—Two days ago (Dec. 2, 1903), one of these exacerbations came on, but with more than usual severity. He vomited very freely the first day, but none since yesterday. Temperature at 10 a. m., 100; pulse, 100; at 4 p. m., temperature, 100.5; pulse, 108. He has had three movements of the bowels from calomel taken last night and Pluto water this morning.

Examination.—Patient has an offensive breath and some coating of the tongue, is very tender over the entire abdomen, but most tender at the pit of the stomach, and to the right. Tenderness is so great as to render palpation and percussion entirely unsatisfactory. Some abdominal distension exists. What seems to be an indistinct tumor can be made out to the right of the median line, and just above the line of the umbilicus. Tenderness is too great for satisfactory examination.

The diagnosis of gallstones with acute cholecystitis was made, and palliative treatment advised.

Course.—December 6. Patient's condition has become very much worse in every way, and it is evident that the case is one of fulminant cholecystitis, or acute pancreatitis. The tumor previously mentioned is now more distinct, but the parts are too tender to enable its relationship to the liver to be determined. Operation was advised and promptly accepted, and the patient was at once removed to Grant Hospital for operation next morning.

Operation.—December 7. Assistant, Dr. Goodman; anesthetizer, Dr. Rice. Under the anesthetic I could determine a line of stomach tympany between the tumor and liver. This excluded the gall bladder as the site of the tumor, and left only the pancreas. Incision was made directly over the tumor. As soon as the peritoneum was opened, extensive fat necrosis was found, involving the omentum and peritoneum. The gall bladder was in easy reach, and was found to contain a number of medium-sized stones, which were removed in the usual way. No stones were present in the common duct, nor in the diverticulum of Vater. The omentum, which was unusually thick, was torn through, and the stomach lifted up, and after separating some light adhesions, the entire pancreas was explored by the hand without much difficulty. It was found considerably enlarged, the principal enlargement being in the region of the head. A large rubber tube wrapped in gauze was introduced down to the pancreas, drainage introduced into the gall bladder, which had previously been attached to the edges of the muscular incision, and the rest of the incision closed after protecting the field of operation by the introduction of washed iodoform gauze. Three of the gallstones were about the size of the end of the finger, and were very black. The rest (52 in number) were quite uniform in color and shape, being about the size of ordinary shot.

Recovery.—The patient made a somewhat slow but very satisfactory convalescence, and left the hospital, Jan. 13, 1904, with some discharge from the gall bladder and also through the sinus leading to the pancreas. January 23, patient telephoned me that he was having some trouble with the sinus, and on examining him I found the sinus plugged up with what on removal proved to be four large pieces of pancreas. February 7, he passed several other pieces, and minute bits have been passed from time to time since then, the last appearing about April 15. It is estimated that altogether from an ounce to an ounce and a half of pancreas have been thus discharged. The sinus has now practically closed.

The patient has for several weeks been steadily improving in health, and now regards himself as entirely well. At no time has there been any sugar in the urine, or fat in the stools, or other evidence of disturbed pancreatic function.

Comments.—The literature at my disposal and correspondence with Dr. Opie of Johns Hopkins Hospital, reveal no similar case. Cases are on record in which the necrotic pancreas has been discharged through the bowel, but none in which necrotic pancreatic tissue has been given exit by surgical means. The case is, therefore, of interest as being thus unique, and as showing the result of prompt intervention in a case of acute hemorrhagic pancreatitis.

125 S. Grant Avenue.

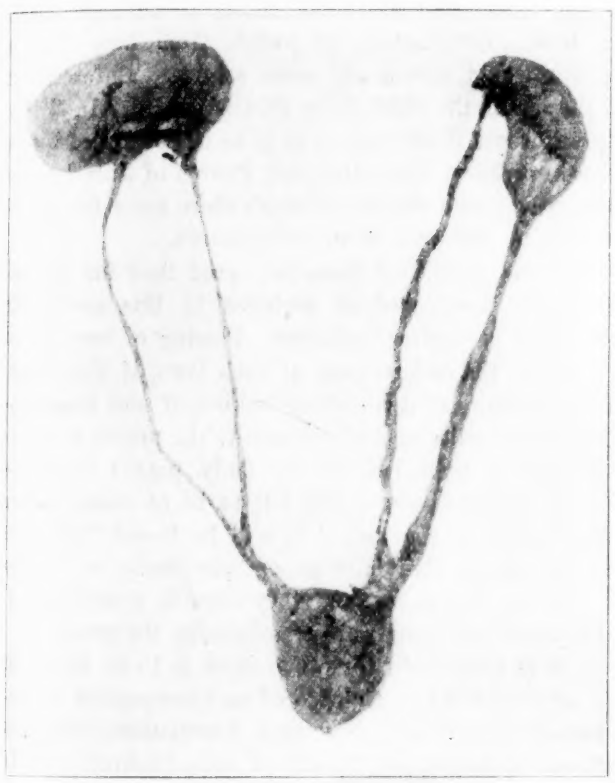
BILATERAL DUPLICATION OF THE URETERS.

LOUIS A. LEVISON, M.D.
TOLEDO, OHIO.

History.—G. F., male, aged 65, was admitted to the county hospital Feb. 15, 1904, presenting signs and symptoms of advanced pulmonary tuberculosis. He died Feb. 25, 1904.

Autopsy.—Both lungs were tubercular. Beside this condi-

tion, there were several interesting anatomic anomalies. The transverse colon was U-shaped, nearly reaching the pelvis. The liver presented a number of deep fissures across the phrenic surface, extending in an anteroposterior direction. From the left lobe of the liver an additional long, flaplike lobe, projected toward the left. Each kidney showed pathologic as well as anatomic changes. The left kidney measured 11x5x3 cm. and showed evidences of contraction from a chronic inflammatory change. The right kidney was markedly atrophic. It measured 7x3x2 cm. and presented changes similar to the left kidney. From each kidney arose two fully developed ureters, each having a separate pelvis, but the two ureters on each side entered the bladder through a common orifice. The distance between the two ureteral orifices is considerably increased. One of the ureters passing from the right kidney is widely dilated throughout. At its beginning it is 4 cm. wide, becoming more narrow lower down, but still remaining three or four times the normal diameter of the ureter.



Bilateral duplication of ureters.

Remarks.—Judging from the number of cases of bilateral duplication of the ureters reported, the condition must be one of extreme rarity. Gould has recently found eight cases in the literature, to which he adds two. Dechtel reports one case, making in all, eleven cases previously reported. Unilateral duplication of the ureters is somewhat more common, but still of sufficient rarity to be of interest.

A SIMPLE CLASS-ROOM METHOD FOR GROWING ANAEROBIC CULTURES.

LEONARD K. HIRSHBERG, A.B., M.D.

BALTIMORE.

The difficulty experienced by all instructors in bacteriology in having each student successfully cultivate anaërobic organisms, induces me to bring this simple method before those who teach this subject to large bodies of students. The method is applicable to all anaërobes and it was first tested by our last class of fifty students, the great majority of whom thus effectively grew cultures of *B. aerogenes capsulatus* (Welch), *B. anthracis symptomatici*, *B. œdematis maligni* and others.

A stab culture of the organism is made in an ordinary nonslanted agar tube. A second agar tube is melted in a water bath and allowed to cool to 40 C. The cooled solution of agar is then impregnated with two cubic centimeters of pyrogallic acid which has been freshly prepared by adding to one part of water an equal quantity of the acid and an equal quantity of a 5 per cent. sodium hydroxid solution.

The melted pyrogallic acid-agar is then quickly poured into the tube previously inoculated and the latter is then incubated. After twenty-four hours an abundant growth will usually be seen in the lower part of the clear agar.

New Instrument.

A TENACULA SCISSORS FOR THE REMOVAL OF DEEP-SEATED PERMANENT SUTURES.

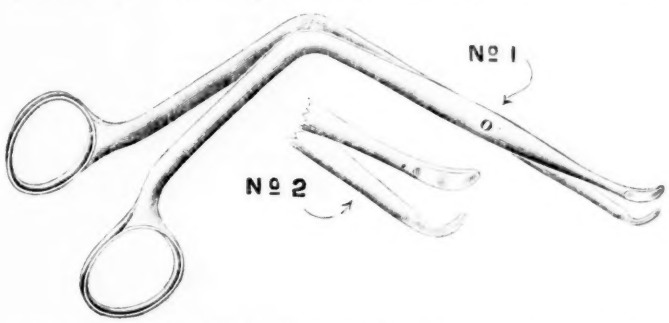
CHARLES NELSON BALLARD, B.S., M.D.

Assistant Professor of Gynecology and Clinical Gynecology, College of Physicians and Surgeons; Assistant Surgeon Marion Sims Hospital.

CHICAGO.

Surgeons who find it necessary to do work in the deeper cavities of the body wish many times to use permanent suture material, but refrain from doing so on account of the difficulty of its removal with the present instruments manufactured for this purpose.

Absorbent suture material can be used for much of this work, but often it is better to use something more fixed or splint-like to hold the parts accurately coaptated till union



takes place. All absorbent material relaxes to some extent when it becomes saturated with the secretions of the tissues in which it is used. If the tissue is very firm there is a tendency for the parts to separate, owing to the stretching of the absorbent material used. As examples are vesicovaginal fistula, rectovaginal fistula, amputation of the cervix, trachelorrhaphy, or any operation in the vagina which makes it necessary to use permanent suture material such as silkworm gut. This material is difficult to remove from these positions with the forceps and scissors, or tenacula and scissors.

To use these two instruments it makes it necessary to use both hands, thus obstructing the view of the operator. The scissors are usually sharp pointed and wound the tissues near the suture.

The tenacula, if sharp, also pricks the tissues, causing more or less laceration, and a tendency to the formation of unhealthy granulation.

All of this trouble has induced me to devise an instrument which does away with the two sharp-pointed instruments and replaces them with one probe-pointed tenacula scissors with a drop handle. Thus the view of the operator is not obstructed and the tissues are not cut or punctured by sharp-pointed instruments.

In the accompanying illustration No. 1 shows the instrument slightly opened and one-half size. No. 2 shows the tenacula and scissors point full size.

The scissors side has a curved edge made to accurately fit the curve of the tenacula side. The tenacula side also has a cutting edge.

These edges are prevented from injuring the tissues by each side being probe pointed. Nowhere is the cutting edges exposed so as to come in contact with the tissue. As soon as the stitch is picked up by the tenacula side, the handles are closed and the suture is cut with any other scissors.

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SATURDAY, MAY 21, 1904.

THE GLORIOUS FOURTH AND THE INGLORIOUS FIFTH.

After the smoke and noise of the last celebration had died away and the returns of the annual holocaust were in, THE JOURNAL summed up the cost of life and limb as it had not been done before, and published[1] the totals with their full and dreadful significance. Since that time we have had many reasons for being glad that we did the work and presented its results, for throughout the country many earnest workers for civic betterment have availed themselves of our figures to use as argument to secure the passage of ordinances directed to the prevention of these mournful features of a day of noise and turmoil. From many states have come newspaper accounts of city councils passing bills directed against the sale of toy pistols, blank cartridges and giant crackers to minors, and quoting the figures that we published last August—406 deaths from lockjaw, 60 from other causes, and 3,983 injuries that were not fatal.

The time has now come to look forward once more to the coming Fourth, and to see if, in the light of our past experience, a complete repetition of the annual calamity can not be avoided. It is evident that a certain amount of public sentiment has been stirred up in one way and another, but whether it will assume its activity at the proper time is another question—the most general condemnation of the method of celebrating the Fourth, and the loudest calls for a change are usually heard about August 1. In Chicago last year a pathetic example of this was furnished. There have been standing on the city statutes of Chicago for many years ordinances providing penalties for the sale of pistols to minors, but their enforcement has never been anything worth mentioning. In the latter part of June, 1903, after a few premature lockjaw cases had followed blank-cartridge injuries, some desultory arrests of venders of these weapons were made, but no general effort was made to close down on this source of trouble. The small boy had not the slightest difficulty in procuring the materials for his destruction, as we easily demonstrated by experiment. But when the daily papers began to fill with reports of deaths from lockjaw a few days after the Fourth, *then*, and not until then, was any determined effort made to stop the sale of toy pistols. At that time we found that a boy in knee trousers had to go sometimes to as many as two or even three stores before he could purchase a toy pistol.

The lesson is plain. Something must be done now to awaken the police departments of our cities to their duties in this direction. Last year 64 per cent. of the total injuries and over 80 per cent. of the fatal injuries were the results of blank cartridges. Nearly all cities, it would seem, have at some time passed ordinances that control their sale, or the sale of the pistols in which they are used, but, as a rule, the ordinances have remained on the books unconsulted and non-enforced. It would not be a difficult matter to reduce this source of mortality greatly; the pistols and cartridges are sold usually by dealers in sporting goods or in "notion stores," and every policeman knows all such places on his beat. Confiscation of pistols from boys on the Fourth would also be of some service. Enforcement of the law is the chief thing that is needed. In Washington, where these matters seem to be controlled better than in ordinary municipalities, Fourth of July tetanus is extremely uncommon, although there are a fair number during the year from other causes.

It seems to us that there is a good field for the activities of local medical societies in this particular branch of preventive medicine. Passing of resolutions requesting the enforcement of such laws, if they exist, or the drafting of them where lacking, if sent from representative bodies of medical men to the proper authorities, and if published in the daily papers to create popular interest, would not fail to be of effect, either immediately or remotely. It will be found that with few exceptions the daily papers are ready and eager to take up this cause, and they furnish powerful aid. Last year much good work was done by the press.

A good suggestion for other cities is to be found in the establishment in Chicago of an incorporated association—the Chicago Amusement Association—with the purpose of improving Fourth of July celebrations. It is planned by this organization, which is supported by popular subscription, to secure enforcement of the laws, to aid in prosecution when they are violated, and particularly to do everything possible to educate the public as to the necessities of the situation.

1. THE JOURNAL, Aug. 29, 1903. Now procurable in pamphlet form.

THE SCOPE OF STATE SANATORIA.

There is a growing sentiment for the segregation and treatment of the tuberculous. We in America are in this respect far behind Europe, especially Germany, and it is encouraging to observe our own slow but beginning progress.

The Ohio State Legislature, which recently adjourned, appropriated $35,000 for the preliminary work in the creation of such an institution. Of course, "politics" played its accustomed part, and it is not yet clear that the medical profession will be permitted to have anything to say about the personnel of the creating and governing commission or about the location

and scope of the institution. There is manifest a disposition to put the matter in pseudomedical hands that seek something other than the advancement of medical science or the alleviation of human suffering, though such action has not yet been taken. It is expected that the medical profession of Ohio, now well organized, will see that the embryonic institution is saved for its legitimate purpose. In these days of well-nigh universal "grafting," public eleemosynary institutions appear to be a favorite field for such enterprise. Physicians, through their organization, will now find themselves able to do much toward keeping straight the authorities of those institutions in which they are chiefly interested.

The Ohio sanatorium is designed to care for three hundred cases of "incipient" tuberculosis. Its declared purpose, then, is only for the attempt at cure of the early cases. These, however, are the cases in which the outdoor treatment, whether applied at home or in favorable climate, promises the best results. A state sanatorium thus limited in scope may do a great deal of good if properly managed, but it will do nothing whatever toward stamping out the contagion from the community. The advanced cases are to be permitted to spread the infection, thus creating a constant supply of new material for the sanatorium.

As the incipient cases occur in those not yet broken in health or unable to support themselves, it would certainly seem that when the state undertakes to care for those suffering from tuberculosis, it should begin with providing a place for the segregation of those cases that are diffusing the contagion. There is yet no positive proof that the sanatorium treatment of incipient tuberculosis is measurably more effective than the open-air treatment at home when this is scientifically and thoroughly applied.

The pathologist and the therapeutist feel that the Ohio movement is greatly in danger of diversion into a false channel. The organized profession should strongly urge the commission in charge to ponder its task most seriously before finally deciding on a fixed course. The commission should have all the facts plainly set before it.

The general physician, even when practicing among the poorer classes, is able to do wonders for his tuberculous patients in the early stages through the outdoor treatment. Cases in the later stage can not be successfully cared for at home, and, in addition, as centers of infection, they are a menace to their families and to the whole community. Is it wise, then, for a state institution to enter into competition with the practicing general physician? Is it not very much better to begin by segregating the advanced cases of tuberculosis, thus aiding the practitioner by relieving him of the cases in which treatment is almost hopeless and at the same time ridding the community of the grave danger of infection?

THE ETIOLOGY OF WHOOPING COUGH.

It has long been assumed that whooping cough is an infectious disease, although the etiologic factor has not yet been positively determined. Many careful observations have shown that the disease may be communicated from one person to another, and that it may be carried in the sputum from the sick by a third person. It is also well known that one attack confers a certain degree of immunity, a second attack in the same person being only rarely observed. Investigations to determine the etiologic factor have not been wanting, but the results reported are of a very heterogeneous character. Some of the earlier investigators described a protozoön, but of late these observations have been discredited. Various cocci have also been regarded as the cause of whooping cough, but this view has also been discarded. More recently a number of small bacilli closely resembling the influenza bacillus have been described by several investigators, but there is no close agreement among the reports of the different observers.

Czaplewski and Hensel were among the first who described in detail a bacillus which closely resembles the influenza bacillus, and which they believe to be the cause of whooping cough. They found this organism in all of forty-four cases of pertussis which they examined, in five cases of bronchitis which later developed pertussis, and in a case of rhinitis which affected one of the investigators during the progress of this work. The organism is non-motile, and grows on all ordinary culture media except potato. It stains well with ordinary anilin dyes, and young cultures on artificial media retain the stain by Gram's method. The staining with the anilin dyes is not uniform, but more intense at the ends than near the middle of the bacillus, a circumstance which may easily lead to this organism being mistaken for a diplococcus. On Loeffler's blood serum it forms small, nearly colorless, transparent, sometimes grayish, colonies, which seldom acquire a diameter of more than 1 mm. About the same time that this work appeared, Koplik described a very similar organism which he found in thirteen of sixteen cases examined. In 1901 Jochmann and Krause examined the sputum of thirty-one cases of pertussis, and in twenty-five of these found a bacillus which resembles the influenza bacillus. Eighteen of these organisms were different from the others, in that they do not grow on ordinary media, but grow on media containing hemoglobin. They believe that this organism may be the cause of whooping cough, and that the one described by Czaplewski and Hensel is identical with one of their other bacilli, which grows on ordinary media, and to which they assign no special importance. Manicatide[1] recently reported a series of eighty-two cases, in sixty-seven of which he found a small bacillus resembling the bacillus of influenza. This organism is 0.5 μ long and about one-half as thick, and differs from that described by Czaplewski, in that

1. Zeitschr. f. Hyg., Dec. 29, 1903.

it grows on potato and does not show the polar staining. It grows on all ordinary media, and its bouillon cultures are agglutinated by the serum from patients affected with whooping cough. Manicatide immunized two sheep and two horses against this organism, and used the immune serum in the treatment of eighty-nine cases of pertussis with favorable results. The paroxysms are said to have been less severe and less frequent after the first injection, and a number of cases were cured in one to twenty days after the beginning of the treatment.

It is evident that there is a lack of uniformity in the observations thus far reported, and that more work must be done before we can speak of a specific bacillus of pertussis, as has been done by Jochmann. The mere fact that an organism is found, together with other bacteria, in the sputum of a large percentage of cases, does not prove that it is the etiologic factor of the disease. In all of these investigations streptococci were found nearly as often as the so-called bacillus of pertussis, but no one regarded them as the cause of whooping cough. In regard to the agglutination test, we know that it is not always specific, as is shown by the fact that a colon bacillus may be agglutinated by dysentery immune serum, and typhoid bacilli may be agglutinated by the serum of patients suffering from jaundice. As whooping cough is a self-limited disease, the cures reported by Manicatide can not be accepted as proof that the organism which he injected into the immunized animals is the cause of whooping cough. More extended observations are necessary, and until this work has been confirmed by others, the question of the etiology of whooping cough must be regarded as unsettled.

HUMAN AND EXPERIMENTAL LOBAR PNEUMONIA.

In view of the frequence of lobar pneumonia in man it may seem remarkable that all experimenters have found it so difficult to produce the same disease in animals. A vast amount of work has been done in this direction, for the unsolved puzzle of the manner of invasion of the lung by the pneumococcus has been a strong incentive, and it is evident that if we can find a method of producing lobar pneumonia with constancy in animals, we have an important aid in learning the truth of the matter, not to mention a good starting point for studies in therapy. The usual results obtained in experiments of this kind have either been the production of a rapidly fatal septicemia without any considerable lung lesions, or else, at the best, foci of bronchopneumonic type in the lungs. A true diffuse, exudative lobar pneumonia seldom develops, no matter what the means employed, and when it does appear it is only as an exceptional result of methods that are not ordinarily successful.

Wadsworth[1] has made an exhaustive study of the results of other observers, and applied the facts so obtained to a series of new experiments that were exceptionally successful, and that seem to indicate many important things concerning certain of the features of lobar pneumonia. It would seem that man is relatively insusceptible to the pneumococcus during his adult years, as compared with the laboratory animals, and that it is this lack of susceptibility that determines the limitation of the infection to the lung in the peculiar form of pneumonia. It is now known to bacteriologists that lobar pneumonia as it occurs in man is practically always due solely to the pneumococcus, although other organisms may happen to be present; to this extent the pneumococcus is the specific cause of the disease. On the other hand, the pneumococcus is not a specific organism, in that when it infects the lung it does not necessarily produce lobar pneumonia—it may cause bronchopneumonia, or pleurisy, or septicemia, or even a simple bronchitis. When pure cultures of the pneumococcus are introduced into the lungs of laboratory animals, there usually result relatively slight lung lesions, but a rapidly fatal septicemia. When the lung lesions are more prominent they are generally of bronchopneumonic form, and very rarely lobar. This seems to be due to the relatively high susceptibility of the animals to the pneumococcus, so that it does not produce a localized process in the lungs, but spreads rapidly throughout the body. By a series of studies Wadsworth found that it was possible to produce lobar pneumonia by using attenuated organisms injected intratracheally, but that it was necessary carefully to balance the susceptibility of the animal and the virulence of the germ. By previously immunizing the animals to the pneumococcus to a certain degree, so that they had sufficient resistance to prevent general infection, it became possible to produce typical lobar pneumonia much more constantly, for in these animals virulent organisms may remain in the lungs long enough to produce diffuse exudative pneumonitis, before causing death. It thus becomes possible to regulate conditions so that lobar pneumonia can be produced with sufficient frequence to permit of valuable studies being made in the therapy of the disease, certainly an important step.

A marked resemblance can also be seen between these results in experimental animals and the results of pneumococcus infection in man. Healthy adults are too resistant to become infected, except, perhaps, rarely with an extraordinarily virulent strain of the germ. The occurrence of epidemics may be explained in this way, the bacteria becoming extremely virulent for man by growing for several generations in a series of human hosts, for the pneumococcus is particularly capable of exalting its virulence by passing through the same sort of host repeatedly. But when the adult is rendered more susceptible by exposure or disease, pneumococci of ordinary virulence may cause lobar pneumonia. On the other hand, children, the senile and the marantic, having very little resistance, are in a condition more like

1. American Jour. Med. Sciences, May, 1904, p. 851.

that of the laboratory animal, and, therefore, similarly are much more likely to have the lobular form of pneumonia with an early fatal septicemia. So in man, as in rabbits, the development of diffuse lobar pneumonia requires a certain relation between the resistance of the host and the virulence of the bacteria; the chief difference is that man, normally having high resistance, is more frequently in the proper condition for this occurrence than is the rabbit, in which the resistance must be raised, for it is easier to reduce than to increase the powers of defense.

CRYOSCOPY AS A GUIDE TO THE ABSORPTION OF CHRONIC SEROUS EFFUSIONS.

Recent observation tends to attribute increasing importance to chemical and physical influences in connection with various physiologic activities, although at the same time not ignoring the part played by cellular function under such circumstances. Thus it is recognized that the absorption of serous effusions is largely governed by factors influencing osmosis and diffusion. In accordance with the character of the exudate present, an interchange of fluid, salts and albumin will take place between the blood and the serous effusion, the tendency being constantly toward equalization.

To determine whether such physical laws are applicable practically to physiologic and pathologic conditions, Dr. Ladislaus v. Ketly and Dr. Arpad v. Torday[1] made a comparative study of the molecular concentration of the blood and of the fluid obtained in fifteen cases of pleural and peritoneal effusion by means of observations on the reduction in the freezing point. As a result the conclusion was reached that the absorption of chronic pleural exudates can be expected to take place in those cases in which the reduction in the freezing point of the serum obtained by puncture is lower than that of the blood serum, or, at least, is nearly the same. This statement is applicable only to such cases as are unattended with fever or other symptoms indicative of inflammation of the layers of the pleura, for so long as such a condition exists further production of exudate is to be expected. Also in cases of pleural effusion due to nephritis the reduction in the freezing point of the blood serum should be determined. Under such circumstances an opinion can be formed from cryoscopic observation only when the secretory activity of the kidneys is adequate. The absorption of peritoneal exudates of tuberculous origin is dependent on the same factors as influence the absorption of pleural exudates. In cases of peritoneal transudate a conclusion can be based on the results of cryoscopic examination only when the accumulation of fluid is not prevented by mechanical hindrances. A decisive factor in cases of peritoneal and pleural transudate resides also in the cardiac activity. In addition to the results of cryoscopic investigation the condition of the heart must further be taken into account. As a sharp delimitation between an exudate and a transudate can not be made from the determination of the specific gravity and the amount of albumin present, an attempt was made to utilize the cryoscopic method for this purpose, but the results show that the procedure is not capable of distinguishing the one from the other.

The suggestion has been made that the absorption of old exudate is favored by increase in the osmotic pressure, and to this end a proteid diet is recommended, as the complex proteid molecule is decomposed in the body into simple molecules, with the result that the osmotic pressure of the blood is increased. Similar effects are ascribed to drinking-cures with sodium-chlorid water, sweating-cures and mud-baths. There is no doubt that the last method favors and accelerates the absorption of chronic pleural exudates, as has been abundantly demonstrated clinically. The same procedures are likewise often invoked to aid the absorption of exudates of other character. Some doubt prevails, however, as to the utility of drinking-cures in this connection. The results obtained from a determination of the osmotic pressure were used as an indication for or against puncture, this being practiced when absorption of the fluid was not to be expected, and conversely.

1. Deutsches Archiv f. klin. Med., vol. lxxix, Nos. 5-6, p. 563.

CLUB PRACTICE.

According to the *Northwestern Lancet*, Minnesota is seriously ridden with lodge practice. While other states are perhaps as badly afflicted, if not more so, lodge practice has become such an evil in that state that it is exciting more than usual attention. The last number of the *St. Paul Medical Journal* contains a number of replies to inquiries from prominent physicians giving their views on the subject. The question is to be brought before the state house of delegates at its session next month on an appeal from a county medical society from the decision of a district councilor, and we trust it will receive thorough consideration. It appears that at least one-sixth of the population of the city of St. Cloud are beneficiaries of lodge practice on the payment of $1.00 (or $2.00 if the whole family is included) per annum.

The opinion of THE JOURNAL in regard to this question of contract practice has been expressed on numerous occasions, and we have printed from time to time various items showing the extent to which it may develop, if unchecked, as illustrated by what has developed in countries like Great Britain and Germany. How a self-respecting man can take up the responsibility of the life and health of individuals for $1.00 or $2.00 per year is rather beyond our calculation and the disadvantages, not only to himself in the long run, but to his professional brethren, need no extensive argument to be demonstrated. With the question of corporation physicians the case is somewhat different, for, if the salary is adequate and the business confined to

accidents and emergencies, they are not necessarily objectionable. However, any sweating of the profession by a corporation is just as bad in its way as by the benefit societies and likewise should be condemned.

In its editorial comments on the subject the *St. Paul Medical Journal* makes a proposition which seems to us altogether uncalled for. It suggests that the present physicians holding contracts, and those wishing to join with them, form an organization to regulate contract practice. To leave the matter entirely in the hands of the offenders would be reform with a vengeance and would not go far toward mending matters. The only proper thing to do is to insist on what our German brethren are insisting, namely, that individual physicians make no contracts with benefit societies, but allow the members of these clubs to consult any physician, paying the regular fees. They would then be what they pretend to be, insurance companies against sickness and probably could, if well managed, conduct such business profitably. The question is simply an actuarial one. The club doctor's experience in the long run, when he is no longer a club doctor, will teach him the disadvantage of this kind of practice. Poor pay means poor service all the world over and the clubs will find that out, but in the meantime the injury that they can do to the medical profession is almost incalculable. Of this we have evidence enough from experience abroad. Matters regulate themselves in time; nothing is fully settled until it is settled right, but if unassisted by active human effort, the mills of the gods grind slowly.

We repeat: It is time that the organized profession in its delegated bodies take up this question and settle it. It is not necessary to get up a special organization to oppose this club practice as our German confrères have had to do; we are already organized and ready. The question to be decided is: Shall it be consistent with membership in our organization for a member to enter into a contract with a lay organization existing largely or solely for the purpose of sweating the medical profession?

RUSH MONUMENT DEDICATION.

President Roosevelt has consented to accept the Rush monument on behalf of the nation as a gift from the American Medical Association. The ceremony will take place at Washington Saturday afternoon, June 11, at 4 o'clock. It will consist of an introductory address by the President of the American Medical Association; an oration on Benjamin Rush by Dr. J. C. Wilson, Philadelphia, and then the address of the President of the United States accepting the gift.

THE PRACTICAL OBJECT OF ORGANIZATION.

When discussing medical organization there is a point not yet clearly understood by all that should not be overlooked. The chief purpose of the reorganization of medical societies that has been progressing since 1900, is not simply the scientific advancement of medicine. This was well accomplished in the main by the older form of medical society independent of affiliation with other bodies. It was the disorganized state of the profession when called on to face political attack, to accomplish legislative reform, to protect itself from malpractice injustice, to speak with some show of authority on medical questions having a public or semipublic bearing, or to act for the whole medical profession, that necessitated a closer union for the promotion of the material welfare. It is true that the same object might have been attained by organizing a national legislative league, a national medical-defense union, a national physicians' benevolent association, and a dozen other allied independent organizations. But in this way effort would have been scattered and energy dissipated. Clearly it was wise to utilize the existing dissociated societies without in the least interfering with the effectiveness of their scientific work. The perfection and accurate dissemination of medical knowledge certainly is one of the chiefest and most altruistic objects of medical-society fellowship, and the accomplishments in this direction of American medical societies have been second to none. The purpose of the recent wave of reorganization has been to bring this work into new territory—ultimately every county in the Union—and at the same time to unite all eligible physicians in one organization that can speak with authority for the whole profession whenever the welfare of the community demands it or its own interests are threatened.

PASTEURIZED MILK.

What is pasteurized milk? Strictly speaking, this term should apply to a milk which has been heated to a temperature sufficient to kill pathogenic micro-organisms but not sufficient to destroy the enzymes or to materially alter the albumins in the milk. Unfortunately, there is a lack of unanimity among the authorities as to just what temperature is needed to effect this. Russell, Theobald Smith and Hesse have found that 60 degrees C. for fifteen to twenty minutes is sufficient to destroy the bacillus of tuberculosis. Kobrak says 65 degrees; Forster the same. Holt advises 65 for twenty to thirty minutes, while Rotch apparently always employs 75, although it is generally understood that anything over 69 destroys the ferments in the milk and materially alters albumin and lecithin. The question is an important one. Recent researches, notably those of Rabinovitch,[1] show that tubercle bacilli are frequently present in the milk of cows who show no outward signs of tuberculosis, and it is, therefore, of the greatest importance to know just what degree of heat is necessary to destroy these organisms. The statements of Hesse and Theobald Smith that a temperature of 60 degrees was sufficient, have been questioned by Gerber and Wieske, and more recently by Rullman,[2] who mixed fresh tuberculous sputum with milk and then subjected it to various temperatures, after which he used it for intraperitoneal injection of guinea-pigs. The milk, which was heated to 60 degrees C. for twenty to thirty minutes, caused tuberculosis in guinea-pigs in

1. Ztsft. f. Tier Med., vol. viii, 1904.
2. Münch. med. Woch., March 22, 1904, p. 508.

every instance. The same was true of milk heated to 65 for the same length of time. Of six animals inoculated with tuberculous milk which had been heated to 65 for an hour, three gave negative and three positive results. Only a temperature of 68 continued for a full hour gave negative results in all the animals injected. Rullman concludes that a temperature of 68 C. maintained for an hour, with constant agitation, is necessary to destroy the bacillus of tuberculosis, while, if the milk is then rapidly cooled, the flavor will be unchanged, the enzymes not destroyed and there will be only a slight alteration of the albumin and lecithin.

THE APPLICATION OF THE GRAPHIC METHOD TO DIAGNOSIS.

Since the days of the great Piorry physicians have used the graphic method in locating accurately the outlines of certain organs in diseased conditions. Particularly in cardiac and pulmonary affections areas of dullness or adventitious sounds are mapped out on the patient's skin by means of colored pencils. In a recent address Lannelongue[1] has advocated a more extensive application of the graphic method. He claims that particularly in diseases of the joints, and to a less extent in the abdomen, the method may be of considerable value. In the case of suspected joint lesions, especially when these are in an early stage, he maps out with colored pencils the bony prominences and lines of articulation on the two sides, the two joints being held, of course, in exactly similar positions. By this means, according to Lannelongue, slight aberrations from normal which might be overlooked or misjudged are rendered much more apparent than mere palpation would make them. In the abdomen, by means of a pentagon, the angles of which occur at the pubes, the anterior superior spines, and the rib margins at the mammary lines, the author shows the situation of the various parts of the intestine and the attachment of the mesentery. The method appeals to us as one which may be of value in some cases, especially to those physicians in whom the sight is more developed than the touch.

BERI-BERI.

The special form of endemic neuritis, known as beri-beri, is a widely disseminated disease in many tropical countries. Occasional epidemics also appear elsewhere, e. g., among Newfoundland fishermen and in British prisons. The disease may also be brought north in crews returning from the tropics. Great diversity and uncertainty of opinion prevail as to the real cause of this disease. Many regard it as a form of food poisoning; others as the result of fish diet; others, again, as a true infectious disease. Hamilton Wright, who has had excellent opportunity to study beri-beri in the Malay states, adopts the last view, for the reason that in a prison in which this disease had been endemic for years, he observed the development of the disease in prisoners in certain cells and also in monkeys placed within the same cells and fed properly. It seemed as if the cause was resident in the cells and, if we are correctly informed, the disease was banished from this prison by improving the sanitary conditions. Hence Wright holds that beri-beri is not food poisoning, and that it is independent of the nature of the food as such, although the food may convey the special cause, which thrives in dark, unventilated sunless places. Now, in acute cases, there is congestion and hemorrhage of the mucous membrane about the pylorus and in the duodenum, and Wright regards this as the point of localization of the unknown cause, while the nervous lesions and symptoms are the result of intoxication with substances having special affinity for the nerve cells. Depending on the intensity of this intoxication and the part of the central nervous system most affected, will be the character and the outcome of the attack, as well as the nature of the nervous lesions. In acute pernicious cases, in which death may result from involvement of vital centers, the nerve cells show extensive degenerative changes; in more chronic cases the peripheral nerves show secondary processes, dependent, of course, on the earlier lesions of the neurocytes. According to Wright's hypothesis, beri-beri is an infectious disease, the cause of which remains localized in the gastroduodenal walls, where it elaborates a powerful neurotoxin. This seems a promising working hypothesis for further studies with the view of demonstrating the organism. Certainly the development of beri-beri in the imprisoned monkeys[1] is very suggestive, although the length of time they remained in the cells before the symptoms appeared—from one to two and one-half months—seems to indicate that it concerns a disease, which, if infectious, perhaps has a long incubation period.

PSYCHIC DIET.

"Yellow literature" is a nuisance—not to say a curse—especially to the young. It is generally supposed that we suffer more from this than other countries, owing to the freedom of the press and the lack of any censorship whatever excepting that which may be given by certain local and United States laws for the grosser objectionable productions. But this is perhaps a question. We read not long since of the son of a Japanese prince who, instigated by dime-novel literature, started out to become a pirate in the West Indies. If the evil is thus advanced in far Japan, what shall we say of the older Western civilizations? It is not only, however, the "penny-dreadfuls," as the English call them—the blood-and-thunder dime novel—that is damaging. There is a large class of readable literature of which it would be well if young people could forego all acquaintance. A German physician, Dr. Laquer[2] of Wiesbaden, has recently brought out this point. He accepts as a threefold cause of psychic instability, abnormally increased self-analysis, fear and lack of will power, and the reading of exciting literature. He advises that during school life pupils avoid theaters and concerts, for music is also considered a danger. It is a negation of ideation (Gedankens) in art. We have been so long accustomed to think of music as a meritorious indulgence that this opinion seems a little extreme, but he has the backing

1. Le Bulletin Médical, vol. xviii, No. 31.

1. Brain, 1903, civ, 488.
2. Deutsche Zeitschrift für Nervenheilkunde, vol. xxiii.

of physicians of eminence, who have long since pointed out that overcultivating the musical faculty in young people often has a bad effect on the emotional development. The kind of mental diet he prescribes consists mainly in the reading of books of travel, histories and biographies, particularly of men of action, and of humorous books, which he recommends as specially valuable. He calls attention to the comparative paucity of German humorous literature, but gives a list of authors which he recommends. The foreign ones consist almost wholly of English writers, such as Dickens, Jerome, Kipling, and our own Mark Twain. The books he has others might object to some of them. Cynical and selected are fairly representative of the best class, though satirical humor, we believe, should be avoided as cultivating a bad mental habit, even in the young. The reading of the young should be supervised, and the theme frequently changed and the habit of concentration cultivated by writing abstracts of books read. The subject is not a new one, but one that is always worthy of consideration. We have an immense amount of literary dissipation going on, even among school children, as well as among those who are not children, some of it of the most harmful kind. Greater care should be exercised in public libraries and by parents in the selection of reading matter for children at the age when the basis of future habits is likely to be established.

THE HOSPITAL MAINTENANCE PROBLEM.

A few weeks ago, *Charities*, a New York publication devoted to the subject implied by its title, called attention to the great excess of annual expense over receipts of most of the New York hospitals as well as to their overcrowded and generally overtaxed condition. These conditions combined make the problem of hospital accommodation, especially for the poor and not well-to-do, a very serious matter. If the hospitals can not receive the support that they need, they can not care for charity cases to the full extent of the demands and must curtail their operations; in fact, several hospitals have already closed certain portions of their wards and others are proposing to do so. This is not confined to the general hospitals alone; special hospitals are also in the same predicament. The evils are obvious, but the remedy is not clear. In this country the hospitals are supported in part by public funds, in part by endowment, but very largely by voluntary contributions of the charitably minded and the question has been raised whether there should not be a larger diversion of public funds to this purpose than has been heretofore the case. There are objections to this, especially in the large municipalities. Public support implies public control, and public control is political control. We know what it may be. Our public city institutions have had too much of a reputation of being mismanaged and it is in them that the abuses are most frequently charged. Moreover, it is feared that with the appropriation of public funds, the private contributions would rapidly fall off to an extent which would overbalance the account. At present hospitals are popular institutions and are being more and more resorted to by all classes. Most of our charitable institutions are largely imposed on and receive and treat gratuitously or with slight remuneration a large class of people who are able to make much better returns. This is especially the case with large public hospitals. Much, therefore, can be done by more stringent control of admission. We know what dispensary abuse may be, and hospital abuse may be something more or less remotely approaching if not paralleling it. Another point may be considered: It is very possible that our hospitals are not managed and controlled with the economy that should be the rule. We do not mean a false economy or scrimpingness, but a rational economy. In our large cities the restrictions of space require hospitals to be expensive buildings, and this usually adds to the cost of maintenance. One thing is certain: There will have to be a regulation of the charities if they are to be successfully conducted from a financial point of view. This will require probably not only increased giving, but reform in the method and distribution of the gifts. The problem is before us and is one of the more important ones of the present day.

Medical News.

CALIFORNIA.

Personal.—Dr. and Mrs. Arthur H. Mays, Sausalito have started for Europe.——Dr. George F. Brackett, San Francisco has resigned as chief surgeon of the Emergency Hospital Service.

New Hospital for Stockton.—Mr. and Mrs. James H. Hough have offered to build and equip a receiving hospital for Stockton and San Joaquim County, provided that the city and county shall maintain the institution thereafter.

Maternity Hospital Opened.—The maternity wing of the Pasadena Hospital, erected at a cost of $12,000 by the liberality of Mrs. Robert J. Burdette, and to be known as the Clara Baker Burdette Maternity Wing, was formally dedicated May 2.

German Hospital Plans Approved.—Plans for the New German Hospital, San Francisco, were approved by the German Benevolent Society, April 29, and $400,000 was voted to defray the expense of construction. The buildings will be thoroughly fire-proof and will be six stories in height.

Spiritual Healer Acquitted.—Although it was shown that G. W. Winchfield, a "spiritual healer" of Oakland, had traveled for 30 years with itinerant medicine shows, and that he had received a fee of $500 from one individual, a jury, on April 28, found him not guilty of practicing medicine without a license.

State Health Commission Organized.—At a meeting of the federal, state and local health authorities in San Francisco, April 30, an organization was effected, to be known as the "Public Health Commission of California," and the following officers were elected: Dr. Rupert Blue, U. S. M.-H. and P. H. Service, president; Drs. Martin Regensburger, and James W. Ward, vice-presidents, and deputy health officer Louis Levy, secretary, all of San Francisco.

DISTRICT OF COLUMBIA.

College Merger.—The Medical Department of the National University, Washington, merged with the Medical Department of Columbian University, Washington, after the close of the 1902-1903 session.

Howard Medical School Commencement.—A class of 60, of whom 7 were women, received diplomas, May 11, from the Howard University Medical School, Washington. Rev. John Gordon, D.D., conferred the degrees and Dr. Robert Reyburn delivered the doctorate address.

To Remove Stray Cats.—The commissioners of the district are seriously considering the advisability of removing from the district all strange and roving cats because of the allegation of their being somewhat responsible for the spread of contagious diseases and also because they are an annoyance to the public.

Health of the District.—The report of the health officer for the past week shows the total number of deaths to have been

117, of which 70 were white and 47 colored; the total number of births was 102, of which 67 were white and 35 colored. At the close of the week there were 9 cases of diphtheria, 27 of scarlet fever, 49 of typhoid fever and 3 of smallpox under treatment.

GEORGIA.

Personal.—Dr. Walter A. Norton has been appointed city physician of Savannah, vice Dr. Elton S. Osborne, elected physician of Chatham County.——Dr. James B. Morgan has been elected president of the Augusta Board of Health; Dr. John M. Caldwell, secretary, and Dr. W. Harry Goodrich, coroner's physician.

State Association Meeting.—The Medical Association of Georgia held its fifty-fifth annual meeting in Macon, April 20, 21 and 22. Dr. J. N. McCormack of Kentucky, addressed the association on the subject of reorganization, and the question was referred to a committee, which reported favorably, but the report was tabled on a constitutional question. The following officers were elected: President, Dr. W. Perrin Nicolson, Atlanta; vice-presidents, Drs. Mollie A. Clark, Macon, and W. Zellars Holliday, Augusta; censor, Dr. Theodore E. Oertel, Augusta, and delegate to the American Medical Association, Dr. James B. Morgan, Augusta. The next meeting will be held in Atlanta.

ILLINOIS.

Chicago.

Smallpox on the Increase.—During last week seven cases of smallpox in six localities were discovered, and the patients sent to the isolation hospital.

Deaths of the Week.—There were 531 deaths during the week ended May 14. Of these 122, or nearly 23 per cent., were due to pneumonia; 60 to tuberculosis; 40 each from Bright's disease and violence, and 37 from heart diseases.

Consulting Physicians for School Teachers.—In addition to the regular staff of examiners, Dr. E. C. Dudley has named the following consulting staff to pass on doubtful cases: Drs. Robert H. Babcock and Charles L. Mix, heart and lungs, and Drs. Albert B. Hale and Frank Allport, eye, ear, nose and throat.

Pneumonia and Tuberculosis.—Since Nov. 1, 1903, there have been reported 3,565 deaths from pneumonia and 1,696 from consumption in this city. In New York City during the same period, the figures are 9,460 and 4,878 respectively. Pneumonia and consumption are responsible for one-third the total deaths from all causes in the two cities within the last six months and of the two pneumonia has been twice as destructive of human life as consumption.

Reduction in Death-Rate.—Another reduction in the death rate is noted for the week ended May 14. There were 101 fewer deaths reported than during the corresponding week of last year, a decrease of 18 per cent. The decrease is entirely among those under five years of age and is due to the marvellous infrequency of the contagious diseases of childhood. During the first two weeks of the month there were only 22 deaths reported from diphtheria, measles, scarlet fever and whooping cough, as compared with a total of 85 from the same diseases during the corresponding period of 1903.

INDIANA.

Personal.—Dr. George G. Graessle has been elected mayor of Seymour.——Dr. Bruce Easley, New Albany, has returned after a year in Europe.

Commencement.—The commencement exercises of the Fort Wayne College of Medicine were held April 20. During the summer the college building is to be remodeled.

Practiced Without License, Fined.—Dr. F. H. Bloomer of Lagro, was fined $25 and costs, May 7, for practicing medicine without a license. He claimed to be ignorant of the existence of a law requiring physicians to be licensed.

Smallpox.—There were reported in April 260 cases, in 29 counties, with 6 deaths. In the same month last year there were 590 cases, in 56 counties and 21 deaths. The disease assumed decided epidemic proportions in Clay County, where 56 cases occurred; in Grant County, 24 cases; in Vigo County, 45 cases, 2 deaths, and in Warrich County, 24 cases.

Improved April Health.—There was an improvement in the health of the state in April, as compared with March, but not in comparison with the same month last year. For three consecutive months measles has been the most prevalent disease. Pneumonia, which was second in prevalence in March, was fourth in April. The order of prevalence was: measles, rheumatism, bronchitis, pneumonia, tonsillitis, influenza, typhoid fever and diarrhea. Typhoid fever was also more prevalent than usual and more fatal.

April Mortality.—The total deaths for the month numbered 3,322, an annual rate of 15.2 per 1,000. In the preceding month the rate was 18.1 per 1,000, and in the corresponding month last year, 12.7 per 1,000. The increase over April of last year lies almost entirely in the increase of typhoid, influenza and pneumonia. Some important causes of death were: Tuberculosis, 385; typhoid fever, 56; diphtheria, 30; scarlet fever, 21; measles, 40; whooping cough, 14; pneumonia, 557; influenza, 72; cancer, 89; violence, 134, and smallpox, 6.

MARYLAND.

Will Have Sewer System.—The people of Havre-de-Grace have voted $20,000 to establish a sewer system.

Staff Appointments.—Among the appointments made by the governor on his staff are: Dr. John M. T. Finney, Baltimore, surgeon general; Dr. J. Charles Macgill, Catonsville, and Dr. Richard S. Hill, Upper Marlboro, aides, with rank of colonel.

Personal.—Dr. Thomas B. Horton, Curtis Bay, South Baltimore, has been appointed police surgeon, coroner and health physician of the fifth district, Anne Arundel County.——Dr. Elijah Williams, Armiger, Anne Arundel County, is spending several weeks in the pinelands of North Carolina.——Dr. William D. Straughn, Snow Hill, was operated on for appendicitis at the Salisbury Hospital last week.

Baltimore.

Hydrophobia.—Seven persons bitten by rabid dogs were admitted to the Pasteur institute of the City Hospital, May 9.

University Alumni Meet.—The annual meeting and banquet of the Alumni Association of the University of Maryland Medical Department, took place May 11. Dr. Eugene F. Cordell delivered the address on "Universities."

Examinations.—The U. S. Civil Service Commission will hold an examination in Baltimore, June 15, to fill vacancies as laboratory aids in physiology and pathology in the Department of Agriculture. Either sex is eligible, and the salary is $720 a year.

School Children vs. Mosquitoes.—Dr. Leonard K. Hirshberg has urged on the school board that the pupils of the public schools be utilized in the extermination of mosquitoes by being armed with sprinkling cans containing kerosene, as has been done successfully in New Orleans and Texas.

Staff Appointments.—Dr. Eugene H. Hayward has been reappointed pathologist at St. Joseph's Hospital for the ensuing year. The resident staff is as follows: Drs. H. C. Coburn, Jr., Walton H. Hopkins, J. M. Lynch, C. T. Rolls, and James J. Boucher. The dispensary staff includes Drs. E. L. Crutchfield, F. E. Brown, John S. Fischer and Thomas J. O'Donnell.

Medical School Commencement.—The University of Maryland School of Medicine graduated a class of 96 May 12. Hon. Edwin Warfield, governor of Maryland, delivered the address. Dr. Jesse Oliver Purvis won the gold medal, the highest distinction, and the following received honorable mention: Drs. Taylor Lewis, William J. Steward, J. J. Cleckley, and Abdallah Ezzat of Egypt. The following appointments have been announced: assistant resident physicians, University Hospital—Drs. Charles Bagley, Jr. and William N. Gassaway; resident surgeons—Drs. F. G. Wright, Alvin B. Lennan, and W. D. Scott, Jr.; assistant resident gynecologists—Drs. Hugh W. Brent and John L. Nicholson; resident pathologist—Dr. E. B. Quillin; resident physicians, maternity Hospital—Drs. Benjamin J. Bond, and Herbert E. Zepp; assistant resident physicians, Bayview Asylum—Drs. Edgar G. Davis and Joseph Coleman.——A laboratory of original research has been instituted under the "Charles Frick Research Fund," and will be conducted during the ensuing year under the direction of Prof. José L. Hirsh, of the department of pathology.

MASSACHUSETTS.

Boston.

A Wise Appointment.—Dr. Thomas B. Shea, recently appointed health commissioner of Boston has been chief medical inspector of the department for seven years. His appointment is, therefore, in the nature of a promotion. He has been connected with the work since 1888, and is considered one of the best experts in the state on smallpox and infectious diseases.

Hospital Rebuilding.—Work has begun on the rebuilding of the Boston Emergency Hospital, a new five-story structure will replace the old building, and the work will be completed

September 1. There will be 20 private rooms and two wards to accommodate 30 patients each. Women physicians will be admitted on the same basis of practice as men. The whole will remain under the supervision of Dr. George W. Galvin. Fifty thousand patients, it is claimed, were treated here last year.

Mortality and Morbidity.—For the six weeks ended May 14 there were 1,371 deaths in Boston, an increase of 50 over the same period last year, equivalent to an annual death-rate of 19.76; 316 cases of diphtheria were reported, with 24 deaths; 89 of scarlet fever, with 2 deaths; 54 of typhoid fever, with 7 deaths; 1,094 of measles, with 16 deaths; 258 of tuberculosis, and 176 deaths. No smallpox was reported. There were 212 deaths from pneumonia; 2 from whooping cough; 146 from heart disease, 34 from bronchitis, and 23 from marasmus.

MICHIGAN.

Physician's House Burned.—In the fire at Republic, May 4, which destroyed the greater part of the business district of the town, the house of Dr. Elmer E. Lamb was burned.

The Most Dangerous Communicable Diseases.—Meningitis was reported during April at 9 places, whooping cough at 20 places, diphtheria at 61 places, typhoid fever at 76 places, pneumonia at 115 places, scarlet fever at 128 places, smallpox at 151 places, measles at 171 places, and consumption at 260 places.

Commencements.—The thirty-sixth annual commencement exercises of the Detroit College of Medicine were held May 5. Dr. Ernest L. Shurly conferred the degrees and addresses were delivered by Drs. Preston M. Hickey and Henry W. Headley. ——Michigan College of Medicine and Surgery, Detroit prefaced its sixteenth annual commencement, May 3, with a clinical week for the benefit of the alumni. Dr. Daniel B. Cornell, Saginaw, delivered the doctorate address, and degrees were conferred on a class of 28.

April Mortality of Michigan.—The total number of deaths for the month of April was 3,212, or 194 less than the number registered for the preceding month. The death rate was 15.7 per 1,000, as compared with a rate of 16.0 for March. Death by causes: tuberculosis of lungs, 272; typhoid fever, 81; diphtheria, 47; scarlet fever, 25; measles, 27; whooping cough, 15; pneumonia, 302; influenza, 104; cancer, 145, and accidents and violence, 184. There was a marked rise in the number of deaths from typhoid fever, and a decrease in the number reported from pneumonia and influenza, as compared with the preceding month. No deaths from smallpox were reported for April.

Comparative Morbidity.—For April, compared with the preceding month, measles, smallpox, intermittent fever, inflammation of the bowels, remittent fever, dysentery and cholera infantum were more prevalent; and influenza, pneumonia, pleuritis, cancer, erysipelas, diphtheria, inflammation of brain, whooping cough, meningitis, membranous croup, and puerperal fever were less prevalent. For the same month, compared with the average for April in the last ten years, smallpox, typhoid fever and diphtheria were more than usually prevalent; and influenza, pneumonia, pleuritis, intermittent fever, erysipelas, remittent fever, cholera morbus, inflammation of brain, whooping cough, meningitis, membranous croup and puerperal fever were less than usually prevalent. Reports from all sources show meningitis reported at 1 place less; whooping cough at 2 places less; diphtheria at 20 places less; typhoid fever at 6 places less; pneumonia at 51 places less; scarlet fever at 34 places less; smallpox at 13 places more; measles at 19 places more, and consumption at 22 places more, in the month of April, 1904, than in the preceding month. The lessened reported prevalence of pneumonia in Michigan in April was remarkable. It is possible that some of the lessened prevalence may be due to the ten thousand leaflets on the restriction of pneumonia distributed by the State Board of Health since January, 1904.

NEW JERSEY.

Bequests.—By the will of the late David H. Chambers, the Camden Home for Friendless Children will receive $2,000, and the Camden City Dispensary $1,000.

Presentation of Bust.—At the May 3 meeting of the Camden City Medical Society, Dr. Onan B. Gross, on behalf of friends of the late Dr. James M. Ridge, presented a bust of Dr. Ridge to the society.

Sea Side Hospital.—Under the auspices of the Jewish Maternity Association, the Jewish Sea Side Home will soon be opened at Ventnor for the summer. The home was previously conducted at Atlantic City. Last summer 326 patients were treated.

Meningitis and Smallpox.—Several cases of spotted fever have developed in Mount Holly, with one death. The presence of the disease in this locality indicates its spread, as it first appeared in Bordentown and Trenton.——Five cases of smallpox have developed in one family in Deptford.

NEW YORK.

Personal.—Dr. Willard P. Spratling, superintendent of Craig Colony for Epileptics, Sonyea, has been appointed superintendent of Bellevue and Allied Hospitals to succeed Dr. William Mabon, recently appointed president of the State Commission in Lunacy.——Dr. Roswell Park, Buffalo, arrived from Europe, May 8.

Commencements.—The seventy-third annual commencement exercises of the Albany Medical College were held May 3. A class of 41 was graduated. The doctorate address was delivered by President Henry Hopkins of Williams College, and Chancellor Andrew Van Vranken Raymond of Union University presented the diplomas.——The annual commencement exercises of the medical department of the University of Buffalo were held May 3. The Alumni Association held its annual meeting on the same day, which was followed by the annual dinner at the Hotel Iroquois.

New York City.

Personal.—Dr. David Bovaird, Jr., has sailed for Europe.——Dr. William B. Pritchard has been appointed visiting neurologist to the City Hospital.

Bellevue Physician Contracts Tubercular Meningitis.—Dr. Joseph F. McCarthy, a visiting physician to Bellevue Hospital, is critically ill at that institution with tubercular meningitis, which it is supposed he contracted from a child there.

Consumption Among Street Cleaners.—The medical examiners of the street cleaning department have been ordered to make a physical examination of the sweepers and drivers employed by the city, because a large number of men who have asked for sick leave lately were found to be suffering from tuberculosis. The street commissioner hopes to find some disinfectant which can be used in street cleaning.

Large Gifts to Charity.—Solomon Loeb, who died last December, has bequeathed $107,500 to charity. Among the institutions who were recipients of bequests are the following: Montefiore Home, $10,000; Mount Sinai Hospital, $10,000; Hebrew Orphan Asylum, $10,000; New York University as a fund for the support of a chemical laboratory, $10,000; General Memorial Hospital, $2,500, and the sanitarium for Hebrew Children, $5,000.

Contagious Diseases.—During the week ended May 7, there were reported to the Sanitary Bureau 1,836 cases of measles, with 39 deaths; 391 cases of scarlet fever, with 23 deaths; 382 cases of diphtheria with 40 deaths; 1 case of smallpox; 78 cases of varicella; 411 cases of tuberculosis with 197 deaths; 18 cases of typhoid fever, with 8 deaths; and 77 deaths from cerebrospinal meningitis. There were also reported 359 deaths from pneumonia.

Improved City Milk Supply.—Dr. Darlington, health commissioner, has sent letters to all milk dealers and railroads entering the city in which he states that all milk with a temperature above 50 degrees F. will be seized and destroyed and the offenders prosecuted. The letter also stated that the section in the sanitary code relating to the adulteration of milk had been a dead letter for the past three years, but would, hereafter, be enforced strictly. Dr. Darlington has had his milk inspectors given state authority, and they are now investigating all the dairies throughout the state.

Ambulances at Brooklyn Bridge.—Police Commissioner McAdoo has planned to have stationed near the Manhattan entrance to the bridge every week day during the rush hours, from 5 to 7 o'clock, two police surgeons, two patrol wagons, and two patrolmen, so that persons injured may receive quick attention. It is probable that this plan will meet with considerable opposition, and will have to undergo some alteration. The Hudson Street and Governeur hospitals do this work at present, and take pride in their ambulance service. The city pays these institutions a small sum for each patient treated free, and they claim they could do all the work at less cost than the city, and naturally will resent the innovation.

Cerebrospinal Meningitis Increases.—The increased prevalence of this disease in the city causes some apprehension.

From the week ended March 5 to the week ended May 7 there were 357 deaths from this cause, while during the previous year it caused only 454 deaths in the entire state. Cerebrospinal meningitis has usually held fifteenth rank among fatal diseases in this community, but if the present death rate should continue, it would reach the seventh place in the scale. The epidemic, which began March 1, has so far had a mortality of about 90 per cent., and pediatrists in this city seem unable to make a prognosis of the cases under their care. Patients who apparently should recover, die, and those who appear to be hopeless, recover.

Menace to Purity of Water Supply.—New York wants pure water and has been willing to pay the necessary price to get it. Some years ago a village on one of the chief tributaries of the Croton was condemned and obliterated, not because of any exceptionally unsanitary conditions, but because the existence of any village so near the source of water supply was thought to be a menace to the health of the city. The city authorities had forbidden any bathing, boating or fishing in that stream. At the present time important engineering works, such as road-building and railroad improvement, are in progress there, requiring the services of many workmen. Camps and barracks for the accommodation of several hundred men have been established near the site of the old village and these drain directly into the river. The stream is constantly used by the workmen for bathing and laundry purposes. Only the most primitive sanitary arrangements exist. The people of New York do not relish the idea of having such an encampment simply for the convenience and profit of contractors. The typhoid-fever epidemic at Ithaca was attributed to just such an encampment on a stream from which the city received its water supply. If present conditions continue the water supply of New York will be seriously and even dangerously contaminated.

Buffalo.

School Teacher Has Smallpox.—A school teacher, who had never been vaccinated, was recently stricken with smallpox. General vaccination in the public schools accordingly has been inaugurated.

Hospital Staff Election.—The election of the staff of the German Hospital resulted as follows: President, Dr. Charles H. W. Auel; vice-president, Dr. Marcello Hartwig, and secretary, Dr. Frederick Zingsheim.

Medical Curators.—The council of the University of Buffalo selected the following men to fill vacancies on the board of curators in the medical department: Drs. H. J. Nichols, Warren, Pa.; H. J. Knickerbocker, Geneva, and Joseph Fowler, Benjamin G. Long and Franklin W. Barrows, Buffalo.

Quarantined for Rabies.—The townships of Boston, Milton and Malta in Saratoga County and Woodstock in Ulster County are now under quarantine by the state department of agriculture against rabies, which is more or less epidemic there. All dogs are required to be tied or muzzled until the quarantine is raised.

Against Tuberculosis.—The Buffalo Charity Organization Society is preparing for a vigorous antituberculosis crusade. The work will be in charge of Dr. William Callahan, especially engaged for this work, and will be conducted among the crowded tenements of which Buffalo has a great many. There are a great many so-called "lungers" among these tenement houses, and with the co-operation of the Buffalo Health Department an effort will be made to educate the people as to prophylaxis and disinfection.

OKLAHOMA.

Hospital Chartered.—A charter has been issued to the Helen M. Gould Hospital at Chandler, with $50,000 capital.

Again in Trouble.—Rodermund, of unsavory repute in Appleton, Wis., by reason of his sensational aversion to vaccination, is reported to have been arrested recently at Oklahoma City on the charge of practicing medicine without a license.

A Healthy Territory.—Dr. Elmer E. Cowdrick, Enid, secretary and superintendent of the territorial board of health, announces that the general health of the territory has never been so good as now. There are no serious epidemics, and the most prevalent disease is measles in light form.

Demands Revocation of License.—The attorney general has filed a suit in the District Court against Dr. Calvin D. Gulley, Guthrie, a graduate of the fraudulent Independent and Metropolitan Medical College of Chicago, demanding that defendant's right to practice medicine in Oklahoma be revoked and that defendant forever be prohibited from further use of rights under said license.

PENNSYLVANIA.

Philadelphia.

New Italian Hospital.—A charter has been asked for the establishment of a new Italian hospital in the thickly populated Italian section of the city, to be known as the Fabiana Italian Hospital.

Wholesale Vaccination.—Owing to the development of several cases of smallpox in a localized portion of the city, more than 500 persons in the immediate neighborhood were vaccinated. During the crusade one fully developed case of smallpox was discovered.

Health Report.—The number of deaths in the city during the week ended May 14 was 520, being an increase of 52 over those of last week, and an increase of 46 over the corresponding period of last year. There were 295 cases of typhoid fever reported, with 25 deaths. For the preceding 7 days only 277 cases of typhoid were recorded.

Pasteur Treatment in Philadelphia.—Chief Abbott of the Bureau of Health is taking steps toward the establishment of a laboratory for the treatment of hydrophobia. A case of hydrophobia was recently successfully treated in this city by the Pasteur method, in which the serum was received each day from the Pasteur laboratory in New York City.

Hospital Appointments.—The five men who successfully passed the examination for interne at St. Joseph's Hospital were: Drs. C. Menges Truschel, Wheeling, W. Va.; John P. Donahue, Scranton, Pa.; Owen O'Neill, New London, Conn.; Albert Garton, Philadelphia; and E. E. Schlindwein, Erie, Pa. ——The following men have been appointed to the resident staff of the Presbyterian Hospital: Drs. William R. Butt, James T. Williams, Sidney J. Repplier, Ardrey W. Downs, William G. Niles, and Etrbert Z. Giffin.

Must Clean Street Cars.—At the last meeting of the county medical society the subject of the infection-bearing street-car upholstery was discussed. Efforts are being made to have the companies clean the street cars immediately after each trip. Dr. Howard S. Anders, president of the Pennsylvania Society for the Prevention of Tuberculosis, has issued a warning in the lay press to the public and the traction company of the spread of consumption and kindred diseases, which the filthy condition of public conveyances promotes.

Bequests.—By the will of the late Mrs. Joseph B. Townsend $5,000 is bequeathed to the Pennsylvania Hospital and the Jefferson Hospital for the establishment of free beds in memory of Mr. Townsend; $1,000 each to the Visiting Nurse Society of Philadelphia, and the Children's Aid Society.——Bequests of $20,000 have been left the Methodist Hospital by the will of the late John N. Doak, to be used to establish four free beds, to be called "Doak's free beds," in memory of the donor, his wife and parents; $200 additional has been devised for the necessary furnishings. He also bequeathed $1,000 for the Home for Destitute Children.

In the Hands of Their Friends.—Dr. Edward E. Montgomery was operated on at St. Joseph's Hospital, May 14, for mastoid disease. He had suffered for some time with suppurative middle-ear disease, but was thought to be free from mastoid involvement. The symptoms, however, recently became more pronounced, and operation was decided on. On account of his illness all arrangements for a reunion of the class of 1874 of Jefferson Medical College, and entertainment, June 6, have been abandoned.——Dr. Harris A. Slocum was operated on recently in the Pennsylvanaia Hospital for a large abscess of the neck. He is progressing favorably.

Against Illegal Practitioners.—At the meeting of the county medical society, suggestions for a national crusade against illegal practitioners was discussed. It was partially decided to bring the matter before the American Medical Association during its meeting at Atlantic City. Dr. Henry Beates, Jr., read a letter from the editor of THE JOURNAL, commending the society's action, and advocating a national movement against unlawful practitioners.——The Homeopathic County Medical Society will appoint a committee of five to act in conjunction with the organized movement of the county medical society in their efforts to rid the city of illegal practitioners.

RHODE ISLAND.

Providence.

Scarlet fever is very prevalent throughout the city.

Personal.—Dr. Austin H. Longfellow, who has been in Europe for three months, has returned home.

New Quarters for Sick Sailors.—The U. S. Public Health and Marine-Hospital Service has secured a ward at the East Side Hospital.

School Medical Inspectors.—Drs. Ellen A. Stone and Charles E. Hawkes have been appointed city medical inspectors of schools, with a salary of $500 per annum each.

TEXAS.

Personal.—Dr. Frank D. Thompson, Fort Worth, has been elected to the chair of surgery in the Baylor University College of Medicine, Dallas.

Commencement.—Fort Worth Medical College held its annual commencement exercises April 7. Drs. Mary King Robbie, San Antonio, and Harry D. Nifong, Fort Worth, were given degrees "*Cum Laude*."

Quarantine Modified.—As Mexico has consented to all the stipulations and restrictions contained in the governor's recent quarantine proclamation and has consented that Texas and the United States send sanitary inspectors into Mexico, the quarantine officers on the frontier have been ordered to admit all persons from Mexico into Texas not from a city infected last year, and even from these places, provided they have certificates from the state's sanitary inspectors that they had not been in such cities for five days.

State Society Election.—At the thirty-sixth annual meeting of the Medical Association of the State of Texas, held in Austin, April 26-29, the following officers were elected: President, Dr. Ferdinand E. Daniel, Austin; vice-presidents, Drs. John T. Moore, Galveston, Charles E. Cantrell, Greenville, and Walter Shropshire, Yoakum; secretary, Dr. Ira C. Chase, Fort Worth; treasurer, Dr. Robert F. Miller, Sherman; councilors—First District, Dr. Stephen T. Turner, El Paso; Second District, Dr. Preston C. Coleman, Colorado; Third District, Dr. David R. Fly, Amarillo; Fourth District, Dr. Charles M. Alexander, Coleman; Fifth District, Dr. Witten B. Russ, San Antonio; Sixth District, Dr. Henry J. Hamilton, Laredo; Seventh District, Dr. Thomas J. Bennett, Austin; Eighth District, Dr. Wesley A. Rape, Victoria; Ninth District, Dr. Henry B. Decherd, Galveston; Tenth District, Dr. Benjamin F. Calhoun, Beaumont; Eleventh District, Dr. S. R. Burroughs, Buffalo; Twelfth District, Dr. Garland B. Foscue, Waco; Thirteenth District, Dr. Joseph H. McCracken, Mineral Wells; Fourteenth District, Dr. Millington Smith, Sulphur Springs, and Fifteenth District, Dr. Holman Taylor, Marshall; delegates to the American Medical Association, Drs. Sam R. Burroughs, Buffalo, Frank Paschal, San Antonio, J. T. Wilson, Sherman, Robert W. Knox, Houston, and James W. McLaughlin, Galveston; and alternates, Drs. James E. Dodson, Vernon, Thomas C. Whitehead, Del Rio, Charles M. Rosser, Dallas, William G. Jameson, Palestine, and Arthur C. Scott, Temple. The councilors met and elected Dr. Witten B. Russ, San Antonio, chairman, and Dr. Henry B. Decherd, Galveston, secretary. Houston was selected as the meeting place for next year.

GENERAL.

The American Medical Temperance Association.—The thirteenth annual meeting of this association will be held in the parlors of the Hotel Dennis at Atlantic City, June 8 and 9, 1904, at 9 a. m.

American Proctologic Society.—This organization will hold its sixth annual meeting at the Seaside House, Atlantic City, June 8 and 9. Sixteen papers are offered covering the field of this specialty.

Personal.—Dr. I. Rodriquéz Barros, Santiago, Chili, is here to study the methods of teaching and practice in New York and Baltimore medical schools. He has been to Paris and London on the same mission. He will return to Chili in September.

Army Surgeons Appointed.—Out of a class of twenty, the following qualified for appointment as assistant surgeons, U. S. Army, with the rank of first lieutenant: Drs. L. J. Owens, Evansville, Ind.; Frank W. Weed, Baltimore, and Robert M. Culler, Reading, Pa.

American Pediatric Society.—The sixteenth annual meeting of this society will be held at Detroit from May 30 to June 1, and the program indicates that the proceedings are to be of a high value, both in the character of the papers to be presented and in the standing of the authors.

American Laryngological Association.—The twenty-sixth annual congress of this body will be held at Atlantic City June 2 to 4, at the Hotel Chelsea. Among interesting subjects on the program we note that "The Mortality of Operations on the Nose and Throat" is to be discussed, "The Therapeutic Value of Medicated Ointments," "Neuroses of the Upper Air Tract," and "Present Methods for the Treatment of Malignant Diseases of the Larynx."

The Yellow-Fever Prophylaxis Campaign.—The plan of campaign to prevent the reappearance of yellow fever on the Texas-Mexican border, as outlined in the weekly public-health reports, appears to be systematic. Laredo, Texas, where the epidemic prevailed last fall, is the geographical center of operations. The house-to-house inspection has been maintained there for more than two months, with the result that no case of yellow fever has been found. The city council has enacted ordinances embodying provisions recommended by the Public-Health and Marine-Hospital Service. Every case of fever found on inspection is immediately covered with mosquito netting until the case is proven not to be yellow fever, the government furnishing netting to persons too poor to buy it. At the same time, the water barrels in common use in Laredo are either treated with petroleum or covered with a close wire screen, the government also furnishing this screen when necessary. Laredo itself, therefore, at the present time, is considered free from yellow-fever infection. With Laredo as a central point, inspections have been made of all towns along the railroads from Laredo to San Antonio, from San Antonio to Corpus Christi, and from Corpus Christi back to Laredo. Several working parties have been sent out along these lines, each in charge of a physician, and composed of employes who have had experience in sanitary work in Laredo. These parties have visited, and are visiting, towns along these railroads, disinfecting where yellow fever prevailed last year, and demonstrating the method of destroying mosquitoes. They are organizing in each town a citizens' league for continuing the work, and also distributing short but comprehensive circulars describing the method and calling attention to the necessity of enforcing it. The triangle above described covers the principal places where yellow fever prevailed last year, but similar measures are being instituted in the region covered by another triangle, represented by a line drawn from Laredo to Corpus Christi, from Corpus Christi to Brownsville, and from Brownsville back to Laredo, and a new inspection station has been provided for at Rio Grande City, one of the principal crossings from Mexico into the southern part of Texas. Another triangle, which has been covered by inspections, is represented by a line drawn from Laredo north to Eagle Pass, thence to San Antonio, and from San Antonio to Laredo. In the Republic of Mexico, where there was so much yellow fever last year, there is no doubt that the Superior Board of Health is actively engaged in sanitary measures, and it has arranged to send prompt notification to Washington of any reappearance of the disease. The places infected last year are along the lines of three roads running from the Texas frontier, namely, the Mexican National from Laredo, the Mexican International from Eagle Pass, and the Mexican Central from El Paso. Through an understanding effected between the Publich Health and Marine-Hospital Service of the United States and the Superior Board of Health of Mexico, not only has the Superior Board of Health agreed to give prompt notification of the reappearance of yellow fever, but it has cheerfully acquiesced in visits from time to time of Public Health and Marine-Hospital Service officers to the sections named, for the purpose of confirming their good sanitary condition, and all places, almost without exception, where yellow fever prevailed in Mexico, north of the City of Mexico, have been inspected and reported on by the United States Public-Health Service. This smooths out matters, and enables the work to be carried on with success. It is too early to predict whether yellow fever will recur or not, but certainly in both Texas and the Republic of Mexico an active anti-mosquito warfare is being carried on, giving reasonable ground for hope that any considerable prevalence of the fever may be averted.

CANADA.

New Hospital Wing Opened.—A few days ago, in connection with the Toronto Isolation Hospital, a fine new wing was opened with accommodation for 100 additional patients. It cost $32,000.

Donation to Montreal General Hospital.—Hon. G. W. Stephens has given the Montreal General Hospital gold bonds of the Havana Electric Railway Company to the value of $5,000, for the endowment fund. An effort is being made to raise $500,000, but thus far only $60,500 has been raised.

Personal.—Dr. Halsey, lecturer in pharmacology and therapeutics in McGill University, has accepted the chair of therapeutics and clinical medicine in Tulane University, New Orleans. Dr. J. W. Scane, the registrar of McGill Medical Faculty,

succeeds Dr. Halsey, and in addition will continue the work of Dr. Halsey in the Eddie Morris Research Laboratory, together with his duties as registrar.——Dr. W. T. Connell, professor of pathology in Queen's University, Kingston, Ont., has been appointed assistant bacteriologist to the Ontario Board of Health.

Medical Institute for Toronto.—There has just been purchased in Toronto a fine property in Queen's Park by the medical fraternity of Ontario and Toronto, which hereafter will be the home of the Ontario Medical Library, as well as the meeting place of the medical societies of Toronto. This step is an important one, and looks toward the amalgamation of the medical societies of Toronto into an academy of medicine. Dr. J. F. W. Ross, president of the Ontario Medical Association, and also of the Ontario Medical Library Association, is the leading spirit in the transaction.

College Reorganization.—It is proposed to reorganize the corporation of the Royal College of Physicians and Surgeons of Kingston. Owing to university trouble, Queen's Medical Faculty, in 1866, was formed into this corporation under royal charter. In 1892 the medical college again became affiliated with Queen's, but the charter of the royal college remained. Now the intention is to utilize its examining powers for the granting of fellowships, viz., F.R.C.P.S. This degree will be open to physicians of five years' standing, and will be secured only on examination and on approved thesis. The standard will be made the highest for any medical degree in Canada. The Hon. Dr. Sullivan will be the president of this college, he being one of those to whom the original charter was given.

FOREIGN.

German Soldiers Sick.—Among the German troops in southwest Africa, typhoid fever is running a very fatal course. This, with the losses in the conflict with the natives, and the fact that they are far from reinforcements, makes a serious outlook for the troops.

Exhibition of Otology.—There is to be an exhibition of pathologic specimens and of instruments and apparatus in connection with the approaching International Congress of Otology. Those wishing to exhibit specimens, drawings, photographs, instruments, etc., are requested to inform the exhibition committee, Drs. Guément and Lafite-Dupont, or the president of the congress, Dr. E. J. Moure, Cours du Jardin Public, 25, Bordeaux, France, before July 1. As previously announced, the congress will open August 1, at Bordeaux.

The German Congress of Internal Medicine.—The twenty-first German Congress of Internal Medicine was held at Leipsic April 18 to 21, the president, Professor Curschmann, of Leipsic, in the chair. Marchand of Leipsic and Romberg of Marburg, one of Curschmann's former pupils, delivered the main addresses on the one subject announced for discussion, "Arteriosclerosis." It is proposed to lengthen the interval between these congresses to two years instead of having them an annual institution. The next meeting will be held at Wiesbaden, and von Strümpell will preside. Those present at the congress comment on the scant attention paid to bacteriology in comparison with former congresses.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

PATENT MEDICINE ADVERTISING IN MAGAZINES.

DR. FRANK C. TODD, Minneapolis, has had some interesting correspondence with *Everybody's Magazine*. He received a letter—evidently a circular letter—in which the publishers of the magazine stated that they were after the quacks, and asked him to lend a hand. They stated that they "decline to carry any patent medicine or other fraudulent or otherwise objectionable advertisements." "Publishers have no right to lend their pages to help swindle the public," etc.

To this Dr. Todd replied that he had begun to fill out a subscription blank as an expression of his approval of the commendable plan of the magazine, when he discovered that it had a number of such advertisements as those of Dent's toothache gum, Madame Hessler's hair restorer and the Morley artificial ear drum. He called attention to the advertisement of the latter, in which occurred the phrase: "No case of deafness which it will not benefit."

The publishers of *Everybody's Magazine* in reply made a decided backdown from their previous stand. They stated, "If you declined to purchase all magazines and publications that carry patent medicine, fake, financial and other objectionable advertisements, you would have so little reading in your home that you would have to read your medical books or Shakespeare. You have heard of the man who lived so upright a life that he leaned backward. We don't want to be in that condition. We could name half a dozen magazines that are running anywhere from $1,000 to $5,000 worth of advertising monthly that we do not take."

This inconsistency gave Dr. Todd a good opening, and we quote a few sentences from his reply: "I have heard of many fraudulent methods practiced by advertising charlatans, but none more brilliant than yours. It certainly is a good graft if it works. Since you have considered all of its advantages it is hardly necessary for me to point out that by eliminating many quack advertisements and making the claim that you 'decline to carry *any* patent medicine or other fraudulent and otherwise objectionable advertisements,' you are doing more harm than a magazine containing many such fraudulent advertisements, but making no claim to decency, because many readers will be led to believe that those which you do publish are trustworthy. Such being the case, these fortunate few advertisers should be able to pay well for such consideration. While in your first letter you stated that you declined to carry 'any patent medicine or other fraudulent advertisements,' in your last you admit your claim to be a myth, but think you should be considered upright because you carry less than some other magazines—on the principle that it is less criminal to steal $1,000 than to steal $5,000. It is difficult to determine how you make your selection, certainly not on the degree of fraud: perhaps it depends on their financial standing. I am aware that there is at least one newspaper in this country which conscientiously follows the plan of only inserting those advertisements which are not fraudulent, and I am told on good authority that it is made to pay well. I believe that if you honestly carried out the claim which you made in your first letter you would find that aside from doing your plain duty you would find it the best plan from a business standpoint."

SHRINKAGE OF SPECIMENS BY FORMALIN.

INDIANAPOLIS, May 6, 1904.

To the Editor:—Can you tell me what the approximate shrinkage in size of a gross pathologic specimen is after preservation in formalin; also shrinkage in weight? There certainly is considerable reduction in either case. HELENE KNABE.

ANSWER.—It is impossible to give an exact answer to this question, for the change in weight must depend entirely on the nature and condition of the organ and the strength of the solution in which it is placed. If a soft, pulpy tissue is placed in a strong solution of formalin the amount of contraction of the proteid coagulum formed by the action of the chemical may reduce the size appreciably, whereas in such an organ as the kidney or liver formalin of ordinary strengths used in laboratory work has little effect. For example: a heart preserved in Kaiserling solution, 20 per cent. formalin plus certain salts, after standing for six months weighed 25 grams less than when fresh: a lymphosarcoma changed in the same space of time from 1350 grams to 1300; whereas a lung with pneumonia in one lobe, that had been in the fluid for two weeks, increased from 950 grams to 1300, presumably from the taking up of fluid in the portions of the lung that were not consolidated.

HAY-FEVER SERUM.

WILLIS, KAN., May 5, 1904.

To the Editor:—Where can I procure Dunbar's serum for the treatment of hay fever, also directions how to use it? J. J. C.

ANSWER.—This serum was referred to in an article in the *Muenchener med. Wochenschrift*, No. 23, 1903, and abstracted in full in THE JOURNAL, July 11, 1903, p. 139. It was editorially noticed in the same number. The serum can probably be procured by addressing Professor Dunbar, Hygienisches Institut, Hamburg, Germany.

THE FICKER TYPHOID TEST.

DR. L. A. SUGGS, Fort Worth, Texas: In reply to your question as to where you can obtain the Ficker typhoid test. Ficker, in his report, did not give the formula of his preparation, but stated that it would be manufactured for the market by the firm of Merck at Darmstadt. As it must be fresh, it needs to be specially imported, and possibly Merck's branch office in this country will secure it for you.

Marriages.

E. O. HAYES, M.D., Drop, Texas, to Miss Kittie Wileman of Denton, Texas, May 5.

LOUIS L. BRYANT, M.D., to Miss Matilda Crane, both of Cambridge, Mass., April 12.

JOHN SAMUEL ABNEY, M.D., Pineville, Ala., to Miss Lena Winn of Atlanta, Ga., May 1.

JAMES L. MASSEY, M.D., Lubeck, W. Va., to Miss Lizzie McBride of Sandyville, W. Va., May 1.

THOMAS C. BURCH, M.D., Metasville, Ga., to Miss Pauline Strothers of Lincoln County, Ga., April 27.

JAMES RAYNOR WHITING, M.D., New York City, to Miss Mildred Taylor of Poughkeepsie, N. Y., May 7.

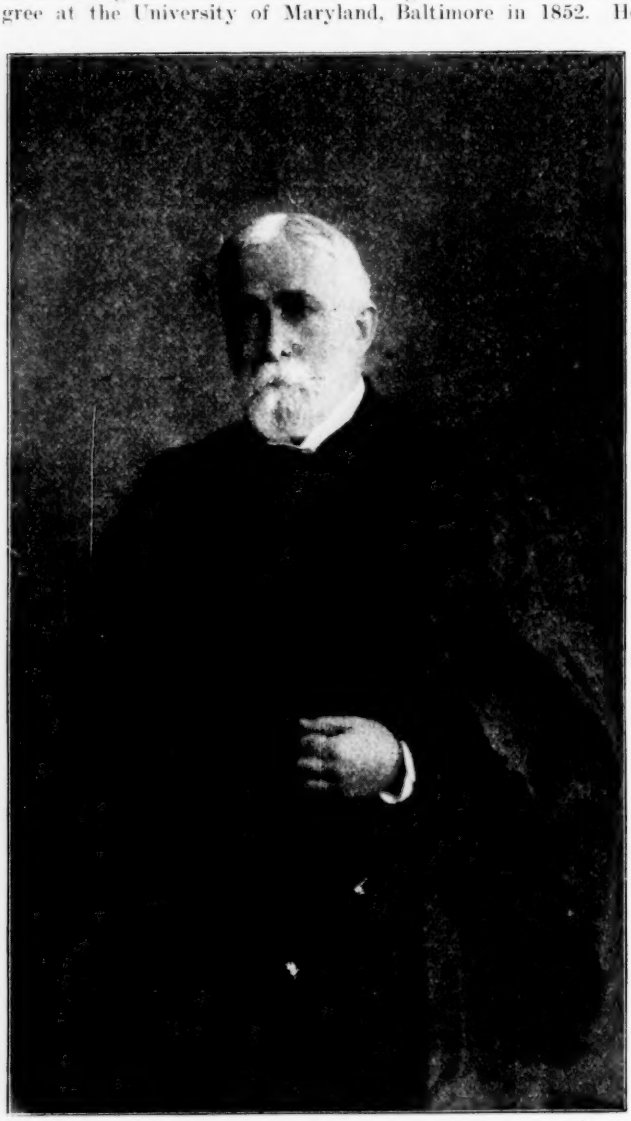
HENRY M. FARR, M.D., to Miss Katherine Chambers, both of Mount Pleasant, Iowa, at Monmouth, Ill., April 29.

FRANCIS HERBERT POOLE, M.D., Dunn-Loring, Va., to Miss Hettie Bauer of Bel Air, Md., at Great Falls, Mont., April 27.

WILLIAM HUNGERFORD BURR, M.D., Wilmington, Del., to Miss Editha Lynde Geer of Hartford, Conn., at San Marcial, N. M., May 3.

Deaths.

Roberts Bartholow, M.A., M.D., LL.D., died at his home in Philadelphia from a nervous disease of long standing, May 10, aged 72. He was born at New Windsor, November 28, 1831, took his degree in arts at Calvert College, and his medical degree at the University of Maryland, Baltimore in 1852. He



ROBERTS BARTHOLOW, M.A., M.D., LL.D.

then entered the medical department of the Army, at the head of the class of candidates, and served as surgeon from 1856 to 1864. During this time, he took part in expeditions to Utah, New Mexico, and the great plains of the West. When the outbreak of the Civil War occurred he was attached to the military post of Fort Bridger, Santa Fe, N. M., and was ordered from there to Washington to take charge of the Government Hospital. In these unquiet times, thanks to the abundant experience of war, he acquired that profound knowledge of pathologic anatomy to which his skill and success in the treatment of disease, was undoubtedly in great measure to be ascribed. At the McDougall General Hospital, Fort Schuyler, N. Y., he wrote for the use of the government "A Manual of Instructions for Enlisting and Discharging Soldiers." He resigned from the Army in 1864, and began the practice of medicine in Cincinnati. Here he became a professor in the Medical College of Ohio. He had previously taught military medical jurisprudence in the Army Medical School. From Cincinnati, he was summoned, in 1879, to the chair of materia medica and therapeutics at Jefferson Medical College, Philadelphia. Here he completed his treatise on "Therapeutics," and wrote his "Practice of Medicine." He devoted himself actively to the work of the college until 1893, when he became professor emeritus. From this time and until a few days before his death, he devoted himself to the almost unremitting practice of his profession, and in addition wrote the following books: "Medical Electricity," which went through three editions, "A Manual of Hypodermatic Medication," which went through five editions, and "Cholera," and revised successive editions of his two chief text-books, the "Practice of Medicine" and the "Therapeutics," which reached eight and eleven editions respectively. As regards Dr. Bartholow's views on the subjects of pharmacology and therapeutics, on physiologic chemistry, etc., in which he was, in a special sense, more deeply versed than the practical nature of most of his writings show, it may be of interest to observe that, though a firm believer in the effectiveness of drugs, in the latter years of his life, he became more and more convinced of the utility of dietetic and hygienic methods of treatment. He enjoyed an unusual power of discriminating the virtues and merits of these separate forces in the genius of healing. The results of purely laboratory experiment, he adopted with all the liberality that they can justly demand, but he became impressed with the frequent nullity of some of the too hasty and general statements with which modern literature is burdened. He was a fellow of the College of Physicians of Philadelphia, a member of the American Philosophical Society, and an honorary member of the Royal Medical Society of Edinburgh and the Society of Practical Medicine of Paris.

Joseph D. Titcomb, M.D. Medical School of Maine at Bowdoin College, Brunswick, Maine, 1881, a member of the American Medical Association, Minnesota State Medical Society, St. Louis County Medical Society, Inter-Urban Academy of Medicine, Chicago Ophthalmological Society and Academy of Ophthalmology and Oto-Laryngology; one of the most prominent ophthalmologists of the northwest; oculist to the Duluth and Iron Range Railroad and to St. Mary's and Red Cross hospitals, died at his home in Duluth, May 6, after a short illness, from pneumonia, aged 45.

Crayke S. Priestley, M.D. University of Pennsylvania, Philadelphia, 1894, son of Dr. James Taggart Priestley, a member of the American Medical Association, Iowa State Medical Society, Polk County Medical Society and Des Moines Pathological Society; professor of dermatology in the Drake University College of Medicine, Des Moines; a young physician of great promise, died at his home in Des Moines, May 13, from pneumonia, after an illness of four days.

Julius A. Freeman, M.D. American Medical College, Cincinnati, 1850; Chicago Medical College, 1877; a member of the American Medical Association; ex-president of the North Central Illinois Medical Association, and Kendall County Medical Society; surgeon of the One Hundred and Fourth Illinois Volunteer Infantry in the Civil War, died at his home in Millington, Ill., May 8, from the effects of a runaway accident aged 76.

William Waterworth, M.D. Bellevue Hospital Medical College, New York City, 1878, a member of the American Medical Association, New York State Medical Association, and Kings County Medical Society; surgeon to the Brooklyn Eye and Ear Hospital, died May 11, at his home in Brooklyn, from sarcoma, aged 53.

Truman Burgess Ellis, M.D. State University of Iowa College of Medicine, Iowa City, 1881, a member of the American Medical Association; secretary of the Harrison County (Mo.) Medical Society; a practitioner of marked ability, died at his home in Bethany, April 28, after an extended illness, aged 48.

David O. Bennett, M.D. Rush Medical College, Chicago, 1870, surgeon general of the South Dakota National Guard, ex-state senator, and veteran of the Civil War, died recently at his home in Clark, S. D., after an illness of one week, aged 61.

Andrew **J. Leitch, M.D.** Medical Department of Western Reserve University, Cleveland, 1871, some-time mayor and city treasurer of Niles, Mich., who retired from practice in 1898, died at his home in Niles, May 7, from paralysis, after an invalidism of nearly a year, aged 56.

Clinton **Cushing, M.D.** Rush Medical College, Chicago, 1865, retired, a member of the American Medical Association, formerly a member of the faculty of the University of California, and a resident of San Francisco, died suddenly, May 10, at his home in Washington, D. C.

A. J. **Campbell, M.D.,** for more than half a century a practitioner, for 9 years physician of Knox County, Tenn., and a surgeon in the Confederate service during the Civil War, died at his home in Knoxville, May 4, after an illness of six weeks, aged 74.

Henry **Levy, M.D.** New York University, 1878, a member of the American Medical Association, a member of the attending staff of the City Hospital, Perth Amboy, died at his home in that city, May 5, after a lingering illness, aged 47.

Jacob C. **Lee, M.D.** Hospital College of Medicine, Louisville, 1877, who had been in failing health for a long time, from an operation wound, shot and killed himself at his home in Lee's Summit, Mo., while despondent, May 8, aged 46.

Martin **L. Shanks, M.D.** Columbus (Ohio) Medical College, 1882, a member of the Cass County Medical Society, died at his home in Casselton, N. D., May 5, from Bright's disease, after an illness of two months, aged 55.

John **E. Miller, M.D.** Starling Medical College, Columbus, Ohio, 1889, a member of the state legislature, died at his home in Darbyville, Ohio, from diabetes, May 8, after an illness of two weeks, aged 43.

John **W. Adams, M.D.** Beaumont Hospital Medical College, St. Louis, 1887, professor of physical diagnosis in the St. Louis College of Physicians and Surgeons, died at his home in St. Louis, April 14.

Josephus **Jordan, M.D.** Medical Department of the University of Cincinnati, 1848, one of the founders of the Muskingum County Medical Society, died at his home in Zanesville, Ohio, May 2, aged 81.

William **F. Miller, M.D.** University of Louisville, 1843, one of the oldest practitioners of Louisville, died at the home of his daughter in that city, May 10, after an illness of one year, aged 83.

J. **M. Woodward, M.D.** Medical College of the State of South Carolina, Charleston, 1878, died at his home in Montmorenci, S. C., April 30, from disease of the stomach and liver, aged 55.

D. **C. Phillips, M.D.** Kentucky, of Millerstown, Ky., died at the home of his son near White Mills, Ky., from paralysis, after an invalidism of nineteen months, April 22, aged 80.

John **W. Brown, M.D.** University of Pennsylvania, Philadelphia, 1870, of Reading, Pa., died at the Pennsylvania State Hospital, May 1, after an illness of ten months, aged 69.

Harper **Franklin Tickle, M.D.** Baltimore Medical College, 1894, died at his home in Charleston, W. Va., May 5, from erysipelas, after an illness of three weeks, aged 41.

James **B. Carruthers, M.D.** Toronto University Medical Faculty, 1886, of North Bay, Ont., died suddenly while making a professional call, March 17, from heart disease.

William **Richardson, M.D.** College of Physicians and Surgeons of Ontario, Toronto, 1866, died at his home in Burlington, Ont., March 14, after a long illness, aged 61.

John **L. Dodge, M.D.** University of Louisville, 1887, ex-president of the Bolivar County Medical Society, died suddenly at his home in Rosedale, Miss., May 10.

Henry **A. Wise., M.D.** University College of Medicine, Richmond, Va., 1896, of Williamsburg, Va., died at St. Luke's Hospital, Richmond, May 5, aged 30.

David **H. Muir, M.D.** College of Physicians and Surgeons, New York City, 1867, thrice mayor of Truro, N. S., died at his home in that city, March 11, aged 65.

George **Payson Jefferds, M.D.** Medical School of Maine at Bowdoin College, Brunswick, 1844, retired, died at his home in Bangor, Maine, May 9, aged 88.

Marcus **A. Taylor, M.D.** Missouri Medical College, St. Louis, 1878, died at his home in Honey Grove, Texas, February 2, from pneumonia.

Leroy **M. Nifong, M.D.** Barnes Medical College, St. Louis, 1897, died suddenly from heart disease at his home in Modesto, Ill., April 30.

Milo Bloomer, M.D. Cincinnati College of Medicine and Surgery, 1864, died recently at his home in Dodge, Neb., from tuberculosis.

Michael Kelley Collver, M.D. University of the Victoria College, Cobourg, Ont., 1882, died at his home in Stevensville, Ont., March 11.

Albion P. Topliff, M.D. Dartmouth Medical School, Hanover, N. H., 1867, died at his home in Portland, Maine, May 8, aged 60.

Earl B. Baker, M.D., died from consumption, April 29, at the home of his father in Hickory, N. C., after a prolonged illness.

Edward Brooking Schley, M.D. New York, 1861, died at his home in Waverly Hall, Ga., May 5, from meningitis, aged 66.

Alfred G. Belleau, M.D. McGill University, Montreal, 1862, district coroner for Quebec, died March 9, aged 63.

Daniel S. Lloyd, M.D. Toronto School of Medicine, 1875, died at his home in West Bay City, Mich., April 18.

Leander Riggs, M.D. Cleveland Medical College, 1870, died at his home in Elizabeth, Pa., May 3, aged 58.

J. W. Lyle, M.D. Texas, died at his home in Springtown, Texas, January 25, from Bright's disease.

John Milton Duff, M.D., of Pittsburg, Pa., died May 14. Further mention will be made next week.

John Christopher Richardson, M.D., died at his home in Burlington, Ont., February 25, aged 38.

Lemont S. Crandall, M.D. New York, died recently at his home in Lamberton, Minn., aged 69.

Marx Pomeranc, M.D. University of Würzburg, Germany, 1866, of Chicago, died March 2.

Edward P. Goodrich, M.D., died at his home in New Haven, Conn., May 6, aged about 60.

Miscellany.

YELLOW FEVER IN BRAZIL.

The Report of the French Yellow Fever Commission Operating at Rio Janeiro, Brazil.

In 1901, a commission, composed of Messrs. Marchoux, Salimbeni and Simond of the Pasteur Institute, was appointed to conduct investigations regarding the etiology of yellow fever and the mosquito *Stegomyia fasciata* in the transmission of the disease at Rio Janeiro. This commission rendered a report, which was published in the annals of the Pasteur Institute in November, 1903.

The commission concludes that the infecting principle in the blood of yellow-fever patients remains active for five days when kept in defibrinated blood under liquid vaselin, but that at the end of eight days the infectivity of the blood has disappeared. They deduce as a result of their experiments that the blood contains this infecting agent during only the first three days of the disease.

They deduce further from their experiments that the blood serum of a yellow-fever convalescent possesses clearly preventive properties. They further deduce as the result of experiments on eleven individuals made in hospital that the blood serum of a yellow-fever convalescent possesses therapeutic properties of considerable curative value.

In regard to the mosquito *Stegomyia fasciata,* their work is particularly valuable. They point out that the habits of the *Stegomyia fasciata* differ very much from those of most other mosquitoes. One of the marked peculiarities of the species is its extreme susceptibility to differences of temperature. It manifests its greatest activity when the thermometer stands at 25 C. Beyond 39 C. the insect dies. At 15 C. to 16 C. the insect becomes inert and ceases to bite. At 12 C. to 14 C., it is benumbed and flies with great difficulty. All of the acts of its life are much influenced by the temperature of the surrounding atmosphere.

The female stegomyia alone bites. The female is perfectly capable of biting immediately after metamorphosis. Within twenty-four hours she bites readily. Within forty-eight hours of metamorphosis and at temperatures between 26 C. and 35 C. she will bite readily at any hour of the day if recently fecundated, but especially beginning at about 11 o'clock in the morning. If the temperature is between 19 C. and 25 C., she

bites less readily. At temperatures between 14 C. and 18 C., she does not seek to bite at all unless artificially warmed by contact with the skin of the victim. She bites less readily between 22 C. and 25 C., but a temperature of 27 C. to 30 C. is that which suits the insect best.

LAYING.

After having filled herself with blood, the female seeks water on which to lay her eggs. Laying is generally effected during the night. The average number of eggs is from 70 to 80. Temperature has an influence on this act, it taking place most readily at a temperature of 27 C. to 28 C. during the night, under which conditions of temperature laying takes place within forty-eight hours after biting. If the night temperature is from 25 C. to 27 C., the laying takes place on the fourth or fifth day. If between 20 C. and 25 C., it is possible up to the seventh or eighth day, and if below 20 C., it may be delayed up to twenty-six or twenty-seven days.

HATCHING.

Hatching is best accomplished at a temperature of 28 C., at which temperature the eggs hatch on the second or third day. If the temperature is as low as 25 C., it takes place on the fourth day. If between 20 C. to 25 C., hatching takes place on the fifth to seventh day, but does not proceed with regularity. The eggs do not seem to hatch at a temperature below 20 C., though they may be preserved at much lower temperatures, even as low as zero, but if brought back to favorable conditions of temperature, hatching proceeds with considerable regularity. The eggs may be immersed in water and a considerable proportion of them still hatch. If dried before immersion, their preservation is better assured.

HABITS.

The stegomyia is a domestic mosquito, preferring for laying her eggs deposits of water such as are found in the interior and in the immediate neighborhood of houses. It seems to thrive better in rain than in spring water.

PUPAL STAGE.

With temperatures ranging from 26 C. to 27 C. by night and 28 C. to 31 C. by day, the larvæ of the stegomyia arrive at the pupal stage seven days after hatching, and at the perfect insect stage on the ninth day. In a majority of instances, however, this latter stage does not occur until the tenth day. At temperatures below 22 C., larvæ may take forty to sixty days to be transformed into pupæ, and these pupæ three to five days to become perfect insects. The ordinary length of the pupal stage is thirty to fifty hours. Larvæ do not perish at a temperature in the neighborhood of zero, but under these conditions they grow very slowly. Sea water is fatal to the larvæ of the stegomyia, but in a mixture containing one-fifth sea water and four-fifths fresh water, they develop, attaining the pupal stage on the eleventh day, and the perfect insect stage on the thirteenth day. In brackish water containing one-third sea water, they die in a few hours. Water containing 1/1000 of its weight of soap kills the larvæ in five minutes. In solutions containing 1/10,000 they do not develop. In solutions containing 1/200,000 they developed normally.

ADULT CONDITIONS.

Blood seems to be necessary to enable the female stegomyia to lay. Human blood appears to be particularly grateful to them. Except in the early days of their existence, when she bites at any time, the female stegomyia prefers to bite by night rather than by day. She may, therefore, be considered as a night mosquito.

LONGEVITY OF STEGOMYIA.

While the stegomyia is very easily reared under proper conditions of temperature and moisture, it dies rapidly when placed in dry air and without blood as food. In captivity they attain the age of two months with comparative ease, but beginning from the fortieth day, mortality among them becomes large, being greater among the males than among females. In the laboratory, females have attained the age of 89, 90, 93, 97, 105 and 106 days. It did not seem possible to preserve males more than fifty days. In the free state, the insect can not live so long, much of its vigor being lost within a short time after its evolution, and its resistance is much diminished by danger and destruction of its scales. High temperatures from 36 C. to 39 C. are unfavorable to the life of a mosquito.

RACIAL PREFERENCES OF THE STEGOMYIA.

The stegomyia will bite individuals of any race, but manifests in Brazil a preference for the white over the Indian and the Indian over the negro. She manifests considerable repugnance to the negro, and bites only after quite prolonged contact. Among the white races she attacks by preference individuals with a thin skin and a fresh color.

CLIMATIC CONDITIONS FAVORABLE TO THE STEGOMYIA.

Every warm and moist climate whose temperature at certain seasons varies between 25 C. and 30 C., is peculiarly suited to it. Between 22 C. and 25 C., it multiplies, but more feebly. Average night temperatures below 22 C. are accompanied by a rapid disappearance of the species. The stegomyia resists sudden changes of temperature badly.

INFLUENCE OF ALTITUDE.

In the vicinity of Rio Janeiro the stegomyia is seldom encountered at an altitude of more than 400 meters. At Petropolis, at an altitude of 800 meters, it is not found naturally, and perishes when introduced. It appears, however, that this is not due to the altitude itself, but to the lowered nightly average of temperature.

RELATION OF OTHER MOSQUITOES TO YELLOW FEVER.

The commission concludes that no other mosquito found at Rio Janeiro, or in the vicinity has any relation to the transmission of yellow fever. The commission draws the following deductions in regard to the transmission of yellow fever as a result of their observations:

1. That yellow fever is not transmitted in nature, either by direct contact with the patient or by contact with personal effects or by his excretions.

2. That the transmission is effected by the biting of mosquitoes, and that the only dangerous species, at least in the region in which our researches have been conducted, is the *Stegomyia fasciata*.

3. That this transmission never takes place during the day while the sun is above the horizon.

In regard to protection against the infection of yellow fever, the commission deduces that "the introduction of merchandise is unattended with danger at any time."

In regard to arrivals from a territory infected with yellow fever at a port or place where the disease does not prevail, the commission deduces that "it is perfectly useless to inflict a quarantine if stegomyiæ do not exist in the country at the time of arrival, since transmission can only be effected by this intermediary."

MEASURES LOOKING TO THE DESTRUCTION OF THE STEGOMYIÆ.

The observations of the commission present no points of particular interest for us in the United States. It is gratifying to find, however, that they have arrived at practically the same conclusions as have been arrived at as the result of experiment and observations in the United States.

CONCLUSIONS.

The general conclusions of the commission may be summed up as follows:

1. The serum of a patient on the third day of the disease is virulent.

2. On the fourth day of the disease, yellow-fever blood no longer contains any virus, even when the fever is high.

3. One-tenth of a cubic centimeter of virulent serum injected under the skin is sufficient to cause yellow fever.

4. The virus of yellow fever rubbed on a blister of the skin, made by removing the epidermis, does not give the disease.

5. In the serum of the patient, the virus of yellow fever passes through a filter Chamberland F without dilution.

6. Under the same conditions it does not appear to pass through filter B.

7. Virulent serum preserved exposed to the air at a temperature of 24 C. to 30 C., is inactive at the end of forty-eight hours.

8. In defibrinated blood, preserved under liquid vaselin at a temperature of 24 C. to 30 C., the microbe of yellow fever remains living for five days.

9. At the end of eight days defibrinated blood, kept under the same conditions, no longer contain active virus.

10. The virulent serum becomes harmless after heating for five minutes at 55 C.

11. A preventive injection of serum heated for five minutes at 55 C., confers a relative immunity which, followed by inoculation with a very small quantity of virus, may become complete.

12. The injection of defibrinated blood, kept in the laboratory under liquid vaselin for eight days at least, confers a relative immunity.

13. The serum of a convalescent is endowed with clearly preventive properties.

14. The immunity conferred by the serum of the convalescent is still in evidence at the end of twenty-six days.

15. The serum of a convalescent appears to have therapeutic properties.

16. As has been proved by Reed, Carroll and Agramonte, yellow fever is produced by the bite of the *Stegomyia fasciata*.

17. To be able to produce the disease in man, this mosquito must be previously infected by absorbing the blood of a patient stricken with yellow fever during the first three days of the disease.

18. The infected mosquito is only dangerous after an interval of twelve days from the time when it has ingested virulent blood.

19. The bite of two infected mosquitoes may cause a serious illness.

20. The mosquito appears to be more dangerous in proportion that her bite is delayed after the time when it has become infected.

21. The bite of infected mosquitoes does not invariably give yellow fever.

22. When the bite of infected mosquitoes has been without effect, there is no immunity conferred against the injection of virulent serum.

23. In the neighborhood of Rio de Janeiro, as in Cuba, no other mosquito than the *Stegomyia fasciata* is concerned in the transmission of yellow fever.

24. Contact with a patient, his personal effects, or his excretions, is incapable of producing yellow fever.

25. Outside of the bite of the infected stegomyia, the only means known of producing the disease is the injection into the tissues of a susceptible individual of blood from a patient collected in the first three days of the disease.

26. Yellow fever can only assume a contagious character in regions where the *Stegomyiæ fasciata* prevail.

27. The prophylaxis of yellow fever rests entirely on measures taken to prevent *Stegomyia fasciata* from biting the individual sick and then a healthy individual.

28. It must be borne in mind that the period of incubation of yellow fever may be prolonged up to thirteen days.

29. The *Stegomyia fasciata* is frequently infected by moulds, yeasts and by sporozoa. No parasite of this species recognized up to this time has any causal relation to yellow fever.

30. Neither in the mosquito nor in the blood have we succeeded up to this time in discovering the causal agent of yellow fever.

Shotgun Quarantine.—In his annual address as president of the Texas State Medical Association, delivered at the recent session of that body, Dr. Paschal had the following to say on quarantine:

> Every county in this state has the right to decree a quarantine against another county without the leave or sanction of the governor or state health officer whenever in the opinion of the county commissioners and county health officers some infectious or contagious disease justifies such action. The county health authorities are superior under the law to the state health officer.
>
> As an illustration of this, the yellow fever episode of last year will serve full well. Trains carrying food were in some instances not allowed to pass through one county into another county, but were held up with shotguns by the county authorities. It has been stated that a well of water happened to be just across a county line, and water could not be taken from it by residents of the other county without those going for a bucket of water being placed in quarantine for five days; also, that a graveyard was just across a county line, a man's wife died, and the husband was told he would be allowed to bury his wife in the graveyard, but that he would have to go into quarantine camp for five days. It was demanded that carloads of ice should be disinfected, that iron machinery should be fumigated, that letters should be perforated, and newspapers headlined "Fumigated" before they could be sent by mail. Indeed, it would be impossible to even attempt to recount the foolish occurrences connected with the quarantine last year. The hardships and privations that hundreds were subjected to will never be known, but long remembered by those who had to endure them.
>
> The interruptions and commercial losses occasioned by quarantining infectious but controllable diseases are too great to be tolerated. Our knowledge concerning the propagation of yellow fever and other infectious and communicable diseases has been obtained after the most searching and convincing investigations, made both in this country and in Europe. They are of a nature to enable us to employ intelligently and effectively scientific and rational measures in preventing their spreading. We should accept the facts derived from these investigations and relegate to the dark ages obsolete theories and not continue perpetuating measures employed when we were ignorant of their causation and manner of dissemination. If interstate and municipal quarantining against yellow fever is continued we must acknowledge that it will be either from fear of public censure or from unwillingness to accept as positive the demonstrated proof that yellow fever is not conveyed by fomites, but by the mosquito. We should stand or fall by truths. Can we accept the results obtained at Havana, which was formerly a hotbed of yellow fever, and where to-day it has practically ceased to exist, as being due to the application of rational methods in handling the disease. If we can, we certainly ought to apply them wherever yellow fever is encountered.
>
> I see no more reason why cities in the south should suffer by quarantine against yellow fever than that New York or Philadelphia should do so. Yellow fever has visited Philadelphia and New York, and is liable to invade them again. If it should, could the commerce of these great cities be stopped by quarantine? I believe not.
>
> If we accepted the scientific teachings of the day relative to the causation and propagation of yellow fever and other communicable diseases and acted accordingly, it would inspire more confidence in the public and prevent upsetting commerce and the uncalled-for criticisms and censure of boards of health, health officers and physicians who dare express their belief regarding the existence of these diseases. Whenever yellow fever visits a city our health authorities are held up to ridicule, to threats and abuse by those who, though ignorant of the disease, flaunt their knowledge of it before the public and their great ability to diagnose it by no other means than by the smell. Unfortunately, a division of sentiment among members of our own profession has proverbially occurred wherever this disease has made its appearance, some claiming it to be yellow fever and others that it is not. This is caused by quarantine and its injury to commerce and not from the actual dangers to human life. If rational methods were employed in handling the disease it would be more easily controlled. Physicians who now hide their cases from health authorities for fear of criticism, or on the presumption that they are doing the commercial interests of their community a good deed, and expect thereby to receive commendation, would probably take the necessary precaution to prevent others from being infected by reporting their cases and would not allow them to remain hidden and continue a menace to the public health.

Arrested Pulmonary Tuberculosis.—F. Parkes Weber, London, discusses this subject from the clinical point of view in the *Zeitschrift f. Tuberkulose*, v. 3, 1904. He thinks it is important to discriminate between the latent, arrested disease and that which is practically the foundation for an existing progressing tuberculosis. This distinction is rendered difficult by the fact that probably every person harbors tubercle bacilli and is, therefore, "tuberculous." This point is especially important for life-insurance examiners. It is not necessary to reject every one who harbors the bacilli or has once expectorated blood. He cites the favorable experience of the English companies in this respect, giving a number of details, to show their success in the opposite course. An arrested tuberculosis is liable to be fanned into a flame by either of two factors, trauma or new and mixed infection.

Association News.

RATES FOR ATLANTIC CITY.

Special Trains Will Carry Large Delegations to the Atlantic City Session.

The excellent railroad rates which have been granted to the Fifty-fifth annual session of the American Medical Association at Atlantic City have been mentioned in THE JOURNAL, April 30. The exact details can be secured from railroad ticket agents.

In the Central and Western Passenger Associations, the tickets will be sold May 31, June 1, 2, 4 and 5. Stop-over will be allowed at Philadelphia on going trip up to June 6, provided that the ticket is deposited at the Philadelphia railroad office immediately on arrival. Tickets are good for return from June 6 to June 13, and within this limit stop-over is to be allowed at Philadelphia, New York City and Baltimore. Those who wish to make a side trip from Philadelphia to New York City, will find that the round trip from Philadelphia to New York will cost $4, and five days will be allowed in which to return. The journey between the two points requires two hours' time.

Chicago will be the focus of travel for much of the western territory, and to Chicago will come special trains from the west and southwest. Two carloads of Iowa physicians and their friends are already reported as arranged for.

The special train out of Chicago which will carry these passengers is the American Medical Association special train over the Pennsylvania Lines. This will leave Chicago Sunday afternoon, June 5, at 2 o'clock, and will run through to Atlantic City without change. It will arrive at Atlantic City at 5 p. m., Monday, June 6. The rate from Chicago will be $20.25. Further information and reservations of berths in sleeping cars may be had from the representatives of the Pennsylvania Lines.

Trains on Other Railroads.

There are a number of railroad lines leaving Chicago for Atlantic City, and all of them will take special pains to accommodate physicians who will travel thereon. The Baltimore & Ohio Railroad will sell tickets for the dates mentioned above at the rate of $20.25 for the trip from Chicago to Atlantic City and return. Their regular trains leave at 10:40 a. m. and 3:30 p. m. Both of these trains are equipped with Pullman sleeping cars, and meals are served in dining cars. Further information may be had from agents of the Baltimore & Ohio Railroad.

The Grand Trunk & Lehigh Valley Route will run special sleepers to Atlantic City, leaving Chicago at 11:05 a. m. Sunday, June 5, and reaching Atlantic City Monday, June 6, at 6:05 p. m. Other trains on this line leave Chicago daily at 3:02 and 8:15 p. m. On the return trip, passengers have the privilege of stop-over at Philadelphia, Niagara Falls and Detroit, for ten days, if desired. The rate from Chicago is the same as stated above.

It is to be noted that all tickets are to be deposited immediately on arrival at Atlantic City with the joint railroad agent, who will certify the ticket and return it to the passenger on the day on which he will leave Atlantic City. This date of leaving is to be not earlier than June 4, nor later than June 13. No deposit fee is required. Any further particulars that may be desired or any explanation concerning matters referred to above may be obtained by applying to the nearest railroad agent. If such agent is not informed of all these details, he will know the proper railroad official to whom to apply.

St. Louis Exposition.

As there will be specially low rates to St. Louis, on account of the Exposition, members from considerable western territory will find it convenient to buy tickets to that city and thence to Atlantic City. We have not yet received particulars of special trains from St. Louis. These will be announced later if they are arranged for.

ORGANIZATION MEETING AT ATLANTIC CITY.

Gathering of Councilors and Officers of State Associations to Discuss Organization.

An important meeting of councilors and presidents and secretaries of state associations and others especially interested in the work of medical organization, has been called in the assembly room of the House of Delegates, at the High School Building at Atlantic City, at 3 p. m., Tuesday, June 7, to consider the practical questions involved in this great movement.

Many of the most experienced officers and councilors from every section of the union have signified an intention to attend and to take part in the meeting, and a cordial invitation is extended to all to do so without other notice.

The following provisional program has been arranged, the papers being limited strictly to ten minutes:

1. The Councilor and His Difficulties, Leartus Connor, Detroit, Chairman of the Michigan Council.
2. The Councilor and His Successes, W. B. Russ, San Antonio, Chairman of the Texas Council.
3. How County Societies May Be Made Attractive, Brooks F. Beebe, Cincinnati, Chairman of the Ohio Council.
4. The Qualifications of a State Secretary, Arthur T. McCormack, Bowling Green, Member of the Kentucky Council.

It is expected that these papers will be followed by crisp discussion of the issues presented, each speaker being limited to five minutes. Those present will determine for themselves as to whether or not other meetings will be held during this session, and as to the advisability of making the organization permanent.

OPHTHALMOLOGY PAPERS ILLUSTRATED.

Convenient Device for Illustration of Papers Before the Section on Ophthalmology.

Through the courtesy of the Chicago Eye, Ear, Nose and Throat College, the Section on Ophthalmology will have the use of the Hoy opaque projector—the first model of the instrument so far built—in illustrating papers read at the Atlantic City session. The greatly magnified image of black and white or colored drawings (original or reproduced in atlas, magazine or other book), such as perimeter charts or fundus paintings, can be projected, without previous preparation, on the screen. It is not necessary to remove such pictures from the book or magazine containing them. Instruments, flat bones, or, indeed, any flat object not too large (not over 12 inches in length or breadth), can be faithfully projected in the same way. In addition to this instrument, two stereopticons and an instrument for projecting microscopic slides will be furnished for the convenience of members. Prospective readers of papers should notify the secretary of the section, Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., how many slides, drawings or other illustrations they will present.

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending May 14, 1904:

Kean, Jefferson R., surgeon, Webb, Walter D., and Lyster Theo. C., asst.-surgeons, appointed members of a board of medical officers to meet at West Point, N. Y., about May 23, 1904, for examination of cadets of graduating class and candidates for admission to the Academy.

Geddings, Edward F., asst.-surgeon, granted two months' leave about May 15, with permission to apply for one month's extension.

Rutherford, Henry H., asst.-surgeon, now on sick leave of absence at Hot Springs, Ark., will report to commanding officer, Army and Navy General Hospital, for such duty as he may be able to perform.

Stedman, Chester J., asst.-surgeon, relieved from duty at Columbus Barracks, Ohio, and ordered to Fort Liscum, Alaska, for duty.

Bartlett, Cosam J., asst.-surgeon, relieved from duty at Fort Liscum, Alaska, and ordered to San Francisco, and on arrival to report by telegraph to the military secretary for further orders.

Bosley, Jno. R., asst.-surgeon, relieved from duty at Fort Thomas, Ky., and ordered with Third Infantry to Fort Egbert, Alaska, for duty.

Clayton, Jere B., relieved from duty at Fort Egbert, Alaska, and ordered to Fort William H. Seward, Alaska, for duty.

Rand, I. W., asst.-surgeon, relieved from duty at Ord Barracks, Cal., and ordered to cantonment, Presidio of San Francisco, for duty.

Bushnell, Geo. E., surgeon, ordered to assume command of general hospital, Fort Bayard, N. M., on departure therefrom of Lieut-Colonel Edward T. Comegys, deputy surgeon general, under orders for duty in the Philippines.

La Garde, Louis A., surgeon, assignment to Philippine Islands revoked and ordered to duty with the Isthmian Canal Commission.

Felts, Robert L., contract surgeon, granted an extension of one month to his leave of absence.

Titus, Frank H., contract surgeon, relieved from duty at the Presidio of San Francisco and ordered to duty at Ord Barracks, Cal.

Kieruff, H. Newton, contract surgeon, relieved from duty at the Presidio of San Francisco and ordered to duty at the Infantry Cantonment, Presidio of San Francisco.

Ames, Roger P., contract surgeon, granted an extension of five days to his leave of absence from Fort McIntosh, Texas.

Chase, Alpha M., contract surgeon, granted three months' leave of absence from Fort Reno, Okla.

McMillian, Clemens W., contract surgeon, ordered from temporary duty at Fort Ethan Allen, Vt., to Fort Niagara, N. Y., for temporary duty during the target practice season; to return thence to his proper station, Fort Myer, Va.

Navy Changes.

Changes in the Medical corps of the Navy, week ended May 14:

Spratling, L. W., surgeon, detached from duty with the Marine Battalion on the Isthmus of Panama and ordered to duty with the Panama Canal Commission.

Rodman, S. S., P. A. surgeon, commissioned a P. A. surgeon with rank of lieutenant from Dec. 14, 1903.

Sutton, R. L., asst.-surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to duty with the Marine Battalion on the Isthmus of Panama.

Ledbetter, R. E., asst.-surgeon, ordered to the *Lancaster*.

Braisted, W. C., surgeon, detached from the Naval Hospital, New York, and ordered to the *Relief*; authorized to delay one week en route.

Miller, Jr., J., asst.-surgeon, detached from the Naval Museum of Hygiene and Medical School and ordered to the *Denver*.

Zalesky, W. J., asst.-surgeon, ordered to the Naval Hospital, Philadelphia.

Norton, O. D., surgeon, detached from the Navy Yard, League Island, Pa., and ordered to the *Illinois*.

Gates, M. F., surgeon, detached from the Naval Hospital, Philadelphia, and ordered to the Navy Yard, League Island, Pa.

Blackwood, N. J., surgeon, detached from the *Illinois* and ordered to the Torpedo Station, Newport, R. I., with additional duty in attendance on navy and marine officers not otherwise provided with medical aid at Newport, R. I.

Wilson, G. B., surgeon, detached from the Torpedo Station, Newport, R. I., and ordered to the Naval Hospital, Chelsea, Mass.

Marine-Hospital Service.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service, for the seven days ended May 12, 1904.

Carrington, P. M., surgeon, detailed to represent the Service at meeting of the American Medical Association, June 7, 1904, stopping en route at the Bureau.

Nydegger, J. A., P. A. surgeon, granted extension of leave of absence on account of sickness for one month from April 6.

Sprague, E. K., P. A. surgeon, relieved from duty at Calcutta, India, and directed to proceed to the United States.

Kerr, J. W., P. A. surgeon, granted leave of absence for one month from May 20.

Goldberger, Joseph, asst-surgeon, relieved from duty at Tampico, Mexico, and directed to proceed to Monterey, Mexico, for duty.

Holt, J. M., asst.-surgeon, Bureau letter of Feb. 9, 1904, directing him to report to P. A. Surgeon V. G. Heiser at Manila, P. I., for examination for promotion, revoked.

Burkhalter, J. T., asst.-surgeon, granted extension of leave of absence for ten days.

Wightman, W. M., asst.-surgeon, granted leave of absence for seven days from May 1, 1904, under Paragraph 191 of the Regulations.

McKeon, F. H., asst.-surgeon, to proceed to New York (Stapleton) and report to medical officer in command for duty and assignment to quarters.

Pettyjohn, Joseph, and Sweet, E. A., asst.-surgeons, to proceed to New York and report to Surgeon G. W. Stoner, Immigration Depot, for duty.

Spratt, R. D., asst.-surgeon, to proceed to New Orleans and report to medical officer in command for duty and assignment to quarters.

Alexander, E., A. A. surgeon, leave of absence for ten days from May 1, 1904, letter of April 26, revoked.

Richardson, N. D., A. A. surgeon, granted leave of absence for seven days from Feb. 25, 1904, under Paragraph 210 of the Regulations.

Slaughter, A. W., A. A. surgeon, granted leave of absence for 14 days from June 1.

Comfort, N. C., pharmacist, reassigned to duty at Manila, P. I., effective February 7.

Neves, George, pharmacist, directed to proceed to Cairo, Ill., and report to medical officer in command for temporary duty during the absence on leave of Pharmacist C. G. Carlton.

Siedenburg, Frank, pharmacist, to proceed to San Francisco and report to medical officer in command for duty and assignment to quarters.

APPOINTMENTS.

McKeon, F. H., of Connecticut; Pettyjohn, J., of Georgia; Sweet, E. A., of Massachusetts, and Spratt, R. D., of Alabama, commissioned as assistant surgeons.

REINSTATEMENT.

Siedenburg, Frank, of Illinois, reinstated as pharmacist of the third class May 3, 1904.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ended May 14, 1904:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, April 30-May 7, 4 cases.
Illinois: Chicago, April 30-May 7, 2 cases.
Kentucky: Covington, April 30-May 7, 5 cases.
Louisiana: New Orleans, April 30-May 7, 5 cases.
Maryland: Baltimore, April 30 May 7, 5 cases.
Michigan: April 30-May 7, Detroit, 1 case; Grand Rapids, 3 cases.
Missouri: St. Louis, April 25-May 7, 35 cases.
New Hampshire: Manchester, April 30-May 7, 2 cases.
New Jersey: Camden, April 30-May 7, 1 case.
New York: April 30-May 7, Buffalo, 3 cases; New York, 1 case.
Ohio: April 30-May 7, Bucyrus, 3 cases; Dayton, 12 cases, 1 death; Toledo, 1 case; April 29-May 6, Cincinnati, 15 cases, 1 death; Cleveland, 4 cases.
Pennsylvania: April 30-May 7, Philadelphia, 26 cases, 5 deaths; Pittsburg, 6 cases, 1 imported.
South Carolina: Charleston, April 30-May 7, 2 cases; Greenville, April 23-30, 9 cases.
Tennessee: Nashville, April 30-May 7, 8 cases.
Wisconsin: Milwaukee, April 23-May 7, 4 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, March 12-26, 9 cases, 1 death.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, Feb. 1-29, 51 deaths.
Austria: Prague, April 16-23, 2 cases.
Belgium: Antwerp, April 16-23, 16 cases, 6 deaths.
Brazil: Rio de Janeiro, March 27-April 10, 95 cases, 63 deaths.
Canada: Sydney, to April 30, 55 cases, 1 death; Winnipeg, April 23-30, 1 case.
China: Shanghai, March 26-April 2, 15 deaths.
Colombia: Barranquilla, April 18-24, 1 death.
Great Britain: April 16-23, Dundee, 2 cases; Edinburgh, 2 cases; Hull, 3 cases; Glasgow, April 22-29, 31 cases, 2 deaths; Leeds, April 23-30, 5 cases.
Russia: Odessa, March 26-April 23, 9 cases, 1 death; St. Petersburg, April 8-16, 12 cases, 3 deaths.
Turkey: Alexandretta, April 8-16, 16 cases, 1 death; Constantinople, April 10-24, 11 deaths; Smyrna, March 26-April 3, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, March 26-April 10, 8 cases, 4 deaths.
Ecuador: Guayaquil, April 9-16, 8 deaths.
Mexico: Merida, April 24-30, 2 cases, 1 death.

CHOLERA.

India: Calcutta, April 2-9, 104 deaths; Madras, April 2-8, 8 deaths.

PLAGUE—INSULAR.

Hawaii, Honolulu, May 8, 1 death.
Philippine Islands: Manila, March 12-26, 8 cases, 8 deaths.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, April 3-10, 3 cases.
India: Calcutta, April 2-9, 539 deaths: Bombay, April 5-12, 811 deaths.
Peru: Callao, April 3-10, 1 case, 1 death; Chosica, April 14, 2 deaths; Matacuna, April 14, 2 cases.

Medical Organization.

Illinois.

IROQUOIS-FORD COUNTY MEDICAL SOCIETY.—This society was organized at Gilman, May 13, on the standard plan, by Dr. Otto B. Will, Peoria, councilor for the Fourth District, with thirty-six charter members. The following officers were elected: President, Dr. Daniel L. Jewell, Watseka; secretary, Dr. Arthur W. White, Paxton; treasurer, Dr. Frank B. Lovell, Gibson City; censors, Drs. Tolbert B. Strauss, Gibson City, Amos J. Newell, Onarga, and John D. Tieken, Piper City, and delegate to the state society, Dr. Samuel D. Culbertson, Piper City.

Iowa.

CEDAR COUNTY MEDICAL SOCIETY.—This society was reorganized at Tipton, May 10, on the standard plan; the constitution and by-laws recommended by the American Medical Association were adopted, and the following officers reinstated: Dr. Charles W. Baker, Stanwood, president; Dr. Roscoe A. Nash, Tipton, secretary, and Dr. Louis J. Leech, West Branch, treasurer. Dr. Edward J. Van Metre, Tipton, was elected delegate to the state society, and Dr. Charles W. Baker, Stanwood, alternate.

Ohio.

PAULDING COUNTY MEDICAL SOCIETY.—Physicians of Paulding County met at Paulding, May 4, effected organization on the standard plan, and elected the following officers: Dr. L. R. Fast, Paulding, president; Dr. George M. Brattain, Antwerp, vice-president; Dr. Ira J. Dix, Paulding, secretary; Dr. John H. Hosford, Paulding, treasurer; Drs. George E. Brattain and Edwin A. Clark, Paulding, and Dr. Ambrose H. Mouser, Latty, censors, and Dr. George M. Brattain, Antwerp, delegate to the state association.

Reorganization of Oklahoma.

The Oklahoma State Medical Association met at Oklahoma City May 11. As the first order of business a special committee was appointed to consider and report on the subject of a reorganization of the association along the lines proposed by the American Medical Association. At the first afternoon session this committee reported and recommended that the rules be suspended and that the standard constitution and by-laws be adopted by unanimous consent, and this was done with much enthusiasm. This action resulted largely from the phenomenal work done in Texas during the past year, the connection between the profession of the two jurisdictions being very intimate. The officers elected for the coming year were as follows: President, Dr. Aarcha K. West, Oklahoma City; vice-president, Dr. Richard H. Tullis, Lawton; secretary-treasurer, Dr. Eugene

O. Barker, Guthrie; councilors, Drs. Abraham I. Blesh, chairman, Guthrie, William E. Dicken, Oklahoma City, Mahlon A. Kelso, Enid, Richard H. Tullis, Lawton, and Ira B. Bartle, Augusta. There are twenty-six counties in Oklahoma, each of them having a sufficient number of physicians to form a strong local society. In several instances, county societies have already been organized in anticipation of the action of the parent association. As the rank and file of the profession is made up of aggressive and progressive young men excellent results may be looked for as the result of the reorganization.

Texas.

FOURTH COUNCILOR DISTRICT.—Dr. Vernon Mac Cammon, councilor for the Fourth District, writes that the eight counties forming his district all report an increase of membership, and that six out of eight have all the eligible men in the county as members. General satisfaction is expressed by all in regard to the new plan of organization, and the results the profession of the state have already derived from it. He says that in several instances members of the legislature have come before the county society and asked what the members wanted them to do.

AN EPOCH IN TEXAS HISTORY.—The editor of the *Texas Medical Journal*, announcing the meeting of the Texas State Medical Association, said that the session would mark an epoch in the history of the association, and commented further as follows:

Indeed, that organization is now, for the first time, a state medical association in fact, as well as in name. There was something radically wrong in the old organization, as it was found impossible, after twenty or thirty years of zealous and persistent effort, to effect union and cohesion, and the active membership ranged from three to four hundred only. Under the reorganization, which makes organization of county medical societies and membership in the same essential to membership in the state and national associations, and constitutes said county societies an integral part of the state association, the membership has run up within a year to something like 2,500. We assemble this month for the first time since the reorganization. The day is near when to not be a member will make one unpleasantly conspicuous. This renewed interest and awakening of the medical profession has attracted the public attention, and looking to this great association of physicians and sanitarians for guidance and advice in the matter of protection of the public health, the people will, I think, actively aid and support its laudable efforts in that direction. Indeed, I have been assured by representative men and leading members of both houses of the legislature that when the state medical association agrees on any measure needed for the protection of the public health and asks for it, it will be enacted.

ORGANIZATION IN TEXAS—THE GOOD WORK OF THE COUNCILORS.—To show what has been done in one state we abstract the following from the report of Dr. W. B. Russ, San Antonio, chairman of the board of councilors, made to the House of Delegates of the State Medical Association of Texas:

Before presenting a résumé of the results obtained by our efforts I beg to direct your attention to some of the difficulties with which we have had to contend.

To begin with, not a member of the council had ever had any personal experience with organization work along the lines prescribed by the American Medical Association reorganization plan, and, being for the most part busy men, many of them found it an exceedingly difficult matter to arrange their affairs so as to be able to make their official visits at the proper time to neighboring counties. To add to this difficulty the engagements for these visits had to be made a number of days in advance, and could not be broken under any circumstances without serious injury to the progress of the work in the territory under process of organization.

Again, a vast majority of the physicians in almost every county had never been connected with any medical organization whatever, and most of those who had at some time attempted to organize a local society and to keep it alive had been discouraged by failure. Practically all except the councilors themselves were entirely unfamiliar with the new plan of organization, and for this reason but few at first could be induced to give the matter even serious attention. Petty jealousies and bitter feuds between individuals in small communities, and between factions in large towns, were encountered on every hand. Lack of transportation facilities, the loss of time and the expense incurred in attending meetings and similar considerations made many men of reputation and influence hesitate to join. Every conceivable reason from press of business to general lack of interest has seemed to operate in some localities to keep eligible men from taking a proper interest in the work. But in most instances the councilors have found themselves able to meet the emergencies of the occasion. Referring to the difficulties encountered in his district (a fair example of those met elsewhere), and to the method he has employed in dealing with the same, Dr. Holman Taylor writes:

"Perhaps the greatest obstacle met with is the indifference of the profession generally, and the difficulty of getting at them. I have met this by always selecting a good worker in the largest town in the county, getting him enthused, fully instruct him, then put him to work on the rest of them, finally calling a meeting when interest seems to be aroused sufficiently to make it a go. I have never found it very difficult to talk the crowd into organizing at once; the only difficulty is to get the crowd."

The results during the past nine or ten months of active work amply testify to the zeal and enthusiasm displayed by a majority of the board of councilors in prosecuting this great undertaking, but in this connection I cannot refrain from referring to the hard work done and sacrifice of time entailed by some of the individual members of the board. In reply to an inquiry as to the time consumed in the discharge of his duties as councilor, Dr. Sam R. Burroughs of the eleventh district writes:

"The time required to cover an almost continuous correspondence, including the preparation and mailing of circular letters and other literature, with the addition of one visit to each of nine counties, and two visits to two counties, could very likely be compressed into two months, but the loss of this time in the manner in which it has actually occurred has operated to a greater loss of time to the councilor."

Dr. Cantrell of the fourteenth district reports: "I have spent about forty days away from home on organization work during the past year, during which time I have visited nineteen counties."

Drs. Fly of the third district and Alexander of the fourth district and Calhoun of the tenth district have lost from twelve to sixteen days each from their practice, and most of the others have suffered fully as much loss. These figures do not include the time devoted to keeping up with the enormous amount of correspondence, which in many instances has been practically continuous during a greater part of the entire year.

Briefly stated, the results obtained are as follows:

Total number of counties organized during year ending April 26, 1904, 175.

Number of county societies established, 129.

Total number of eligible physicians in state (estimated), 4,700.

Present membership of county (and state) organizations, 2,510.

Number of eligible physicians not yet connected with organization, 2,190.

Membership of State Association in April, 1903, 368.

Increase in membership during year ending April 26, 1904, 2,142.

Per cent. increase during year ending April 24, 1904, 582+.

One year ago we estimated that we would be able to increase the membership to 1,000. Six months ago we estimated that the increase would reach 1,500. Three months ago we hoped it might reach 2,000. We were, therefore, surprised to find that the total enrollment reached over 2,500. The increase in interest in the work and the increase in the enthusiasm with which the county society officers have taken it up is but little short of amazing.

Much has been accomplished, but much yet remains to be accomplished. We have devoted our time during the first year to the work of establishing organizations in as many counties as possible. To our successors will be given the task of keeping alive and adding strength to the societies already in existence, as well as that of multiplying the number of organizations. The success or failure of their efforts will depend largely on the spirit and manner in which the county organizations receive their advice and meet their efforts at assistance. It is not to be expected that every member of every society will become an active and enthusiastic worker; nor will the success and prosperity of the society depend upon the attainment of this much-to-be-desired but never-to-be-realized result. Fortunately the efforts of even one active and tactful man in a given county may easily be the means of building up a strong and enduring organization. If the delegate, for example, whom it is presumed is at least one of the best informed men in his home county as to the merits of our present organization plan, will use his influence to make sure that the secretary and other officers and committees are frequently reminded of their official duties and responsibilities, more than one-half of the burden of the work will be lifted from the shoulders of the councilors, and the results for good will be immediately apparent, and, needless to say, most gratifying.

The future success of the county society will of course depend on the efficiency of its officers and committees; consequently we can not too strongly condemn the tendency now manifested in some counties to regard the matter of election to office in the light of an honor to be given as a tribute of respect rather than as a trust to be placed in the hands of active and energetic men.

This report would not be complete without some reference to the invaluable advice and assistance received on many occasions from Dr. J. N. McCormack, Chairman of the A. M. A. Committee on Reorganization. The medical profession of Texas, as well as that in many other states, owes to Dr. McCormack and his associates a debt of gratitude which cannot be overestimated.

Society Proceedings.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, N. J., JUNE 7-10.

American Gynecological Society, Boston, Mass., May 24.
Medical Society of the State of North Carolina, Raleigh, May 24.
North Dakota State Medical Society, Fargo, May 25-26.
Connecticut Medical Society, New Haven, May 25-26.
Michigan State Medical Society, Grand Rapids, May 25-27.
American Medico-Psychological Assn., St. Louis, May 30-June 3.
Amer. Laryn., Rhin., and Otol. Society, Chicago, May 30-June 2.
South Dakota State Medical Association, Redfield, June 1-2.
Maine Medical Association, Portland, June 1-3.
International Assn. of Railway Surgeons, Chicago, June 1-3.
Minnesota State Medical Society, Minneapolis, June 2-3.
American Therapeutic Society, New York City, June 2-4.
American Dermatological Association, Niagara Falls, June 2-4.
Rhode Island Medical Society, Providence, June 3.
Conf. of State and Prov. Bds. of Health of N. A., Wash., June 3-4.
Indian Territory Medical Association, Holdenville, June 3-5.
American Academy of Medicine, Atlantic City, June 4-6.
Medical Society of New Jersey, Atlantic City, June 4-7.
Nat. Conf. State Med. Exam. and Lic. Bds., Atlantic City, June 6.
American Medical Editors' Association, Atlantic City, June 6.
American Assn. Life Ins. Exam. Surgs., Atlantic City, June 6.
American Gastro-Enterological Association, Atlantic City, June 6.
Nat. Assn. of U. S. Pen. Exam. Surgs., Atlantic City, June 6-7.
Association of American Medical Colleges, Atlantic City, June 6.
Massachusetts Medical Society, Boston, June 7-8.

American Orthopedic Association, Atlantic City, June 8-10.
American Urological Association, Atlantic City, June 10-11.
Medical Society of Delaware, Lewes, June 14.
Wisconsin State Medical Society, Milwaukee, June 22.

NORTH BRANCH PHILADELPHIA COUNTY MEDICAL SOCIETY..

Regular Meeting, held April 14, 1904.

The President, Dr. Samuel Wolfe, in the Chair.

Some Reflex Conditions Caused by Foreign Bodies in the Intestinal Tract.

DR. ANNA M. REYNOLDS read this paper. The first case was that of an infant six months old, taken suddenly ill in the morning with diarrhea followed by vomiting, which was diagnosed on the fourth day as caused by the uterus pressing on the bowel. The next day several hard convulsions occurred, resulting fatally, and the condition was found to be impaction of the bowel.

Another case which was diagnosed as extra-uterine pregnancy proved to be a mass of blackberry seeds. In another, a male infant, had "bilious attacks" which increased in frequency, and finally he lost consciousness; the case was diagnosed as epilepsy. On administration of half a grain of calomel every hour for six doses, followed by castor oil, he passed a brass button which he had lost off his coat, and the convulsions ceased.

Another case was that of a young man who had convulsions at the age of three years and at twenty-four developed epilepsy. He was treated by the bromids with no success, after which he went to the country and gave careful attention to his diet and bowels, and has had only two very light seizures in four months.

DISCUSSION.

DR. BOARDMAN REED believed that there was a great many more conditions resulting from reflex symptoms of the intestinal tract than is usually recognized, not only epilepsy, but also headaches, nervousness, etc., and that even true epilepsy was much aggravated by disturbance therein; he recommended thorough daily evacuation of the bowels.

DR. WILLIAM H. GOOD referred to the case of a woman who was troubled with hoarseness, which disappeared after the expulsion of a large amount of worms.

DR. FRANK WHITE referred to two cases as illustrating the tolerance of the intestinal tract without producing reflex symptoms in some cases. In the first a foreign body 5½ inches long by 1½ inches in thickness and weighing four and one-half ounces was removed from the stomach of an idiotic boy at autopsy; and in the other case about 15 whole shellbarks and about half as many in pieces were removed from a boy's rectum. In neither case were there any reflex symptoms.

The Surgical Treatment of Abortion.

DR. FRANK C. HAMMOND read a paper in which he stated that it was always desirable to ascertain when threatened abortion becomes inevitable, as the treatment will be thereby radically altered. He called attention to the fact that hemorrhage more or less persistent might exist, even during the entire period of pregnancy, without producing an abortion. He cited the cases observed by Playfair, Charpentier, Doloris and others, in which pieces of decidua were expelled without the interruption of pregnancy. When the abortion is inevitable, the chief dangers are from hemorrhage, general septicemia or local infection. Tetanus occasionally follows abortion. Suspicion should always be directed to a case resembling acute articular rheumatism, following a recent abortion, as it is much more likely to be suppurative arthritis, which should be treated by free incision and drainage, strict antisepsis being observed.

The remote dangers from abortion are inflammatory disease of the uterus and adnexa, with the resultant train of pelvic and reflex symptoms. He reported a case in which two Italian physicians had diagnosed malignant uterine disease in a woman of 50, in which curettage and packing with iodoform gauze proved the case to be one of incomplete abortion with retained putrefactive débris. The author believed that if every case of inevitable abortion was submitted to an antiseptic curettage properly done, the mortality would be nil, except in criminal abortions. He believed that the expectant plan of treatment will produce the best results in the hands of the general practitioner, so long as fever, excessive hemorrhage and putrefaction are absent; any retained débris should be removed, for even though it does not produce fever or sloughing, it may cause inflammatory disease of the pelvic organs and invalidism. The author referred to a case on which he operated for bilateral laceration of the cervix and lacerated pelvic floor, no disease of the adnexa, in which the uterus was literally filled with débris, the woman admitting to over 20 self-induced abortions. When abortion is inevitable, the uterus should be at once thoroughly emptied under anesthesia. The treatment of sapremia following abortion should be by emptying the uterus and thorough disinfection of the genital tract with intrauterine douches of formalin 1 to 1,500; or sublimate solution 1 to 3,000 or to 4,000, followed by normal salt solution to avoid the danger of mercuric poisoning. The treatment of septicemia depends on the character of the infection and may be either by measures tending to neutralize the bacteria, or surgical by the evacuation of pus or the removal of the diseased organs.

Difficulty of differential diagnosis is experienced when typhoid makes its first appearance at childbirth. Intravenous injections of normal salt solution, quinin, strychnin, digitalis and atropin, as indications arise; and careful regulation of the diet should be enforced, and in severe cases collapse may be overcome by ammonium carbonate per rectum and nitroglycerin hypodermatically. The treatment of septicemia due to streptococci should be by means of antiseptic uterine douches and drainage by loosely packed iodoform gauze; curettage should not be employed owing to its likelihood of spreading the germs and the production of general infection in an already localized case. Pryor advocates the isolation of the infected uterus between masses of iodoform gauze and local and systemic iodism, to destroy the cocci, locally and systemically. Pus tubes and ovarian abscesses should be removed, either per vagina or by abdominal incision, depending on the accessibility of the lesion and the condition of the patient.

The Etiology and Medical Treatment of Abortion.

DR. I. P. STRITTMATTER stated that the most frequent causes of abortion in his experience had been as follows: 1. prior criminal abortion; 2, syphilis; 3, pyosalpinx; 4, backward displacement of the uterus. In the first class of cases, careful curettage and packing and general tonic treatment; in the second class of cases, administration of the iodids and general antisyphilitic treatment, and in the fourth class suitable operation, had given the best results. In those cases in which there is a relaxed condition of the muscles and joints, with frequent attacks of rheumatism and sometimes attended by heart lesions, antirheumatic treatment should be instituted.

The Medicolegal Aspects of Criminal Abortion.

THOMAS W. BARLOW of the Philadelphia Bar referred to the difference in the laws of different states on this subject, and called attention to the fact that the law of Pennsylvania applies to an abortion committed at any time during pregnancy, while in most other states it must be done when the woman is "quick" with child. He believed that the laws of Pennsylvania were sufficient in this respect and that if the crime was increasing it was due to the non-execution thereof by those on whom the obligation rests. He referred to the function of the police department, detective department, magistrates, coroner, district attorney and courts in the prosecution of such crime, and stated that it was impossible that all should be accomplished by the police power, and suggested that the work against the professional abortionist rests entirely within the profession itself. He recommended that a committee be appointed to take charge of the matter; he believed this would have a deterrent effect on such lawbreakers.

Discussion on the Attitude of the Physician in Cases of Criminal Abortion.

DR. RICHARD C. NORRIS stated that while he appreciated the sentiment that prompted Mr. Barlow's suggestions, he felt

that there were certain practical difficulties in the way, the chief of which was the confidential relation that existed between physician and patient, which deters the physician from reporting the case to the authorities. Another difficulty is the shrewdness with which the abortionists do their work, making it almost impossible to secure legal evidence against them. Many of them even subject their patients to an oath, so that in numerous cases, even with a knowledge of impending death, the victims will not reveal the autnor of the crime, owing to the sanctity of the oath. He believes that the appointment of a committee might have a deterrent effect on a certain class but that the most good could be accomplished by the medical profession by teaching their patients the moral wrong of the affair.

DR. A. M. EATON urged that the physician impress on any patient who should request him to perform an abortion the moral turpitude of the crime, and referred to three cases, in which the women had desired to have the act committed, who had been deterred therefrom by his suggestion to go to a secluded part of the city until after the birth of the child. He referred to the case of a barber who stated that he had performed over 250 abortions without any fatalities by taking a soft catheter and inserting in the womb and injecting milk and carbolic acid "until something gave way."

DR. MORDECAI PRICE stated that he never treated a case of abortion until he was informed who had performed the operation, which course he deemed necessary for the safety of the attending physician. In any case in which the fetus is dead, he believed that it should be removed at once, and when either the membranes or the fetus are discovered to be coming away, the uterus should at once be emptied, with the hand, the curette being used only in cases of necessity. He did not sanction irrigation of the uterus with any fluid and particularly deprecated bichlorid of mercury douche.

DR. A. C. MORGAN referred to a case in which he felt that his professional relation would have prevented him from giving evidence to convict the abortionist, and this he agreed with Dr. Norris was the practical difficulty in the way of the conviction of these men.

DR. W. E. PARKE raised the question as to whether the physician should report a case when he is called in or should the whole thing be kept quiet. He referred to a case which he had seen, in which there had been bleeding and straining for 24 hours, and although the patient absolutely denied any action to induce abortion, it was evident that such was going on. No urine had been passed since the beginning of the attack, and catheterization yielded about a dram of almost pure blood, which could not be accounted for. A few hours later the uterus was cleaned out and three hours thereafter, catheterization yielded about a dram of a slightly less bloody fluid. The next morning it was discovered that there was an opening from the bladder into the genital tract. The patient apparently improved; the temperature became normal and the pulse nearly so for about two weeks, when she was taken suddenly worse and died. The conclusion was reached that the fistula in the genital tract was produced by pushing something into the bladder through the vagina or cervix, in an attempt to produce an abortion.

DR. HENRY S. CATTELL recommended that a blacklist be kept by a committee of the county medical society of all the physicians and others who are suspected of doing this work, which should only be accessible to such committeee, and believed that many physicians would give information to such a committee with the understanding that it would not be given publicity, that they would not give otherwise. He stated that he made attempts, by communicating with the postoffice authorities at Washington, to have the mail of certain of such practitioners withheld, but he had been informed that there was not sufficient evidence to warrant this course.

DR. FRANK C. HAMMOND said that the untoward effects produced by the use of the curette were rather the fault of the operator than of the instrument. He stated that he could see no reason for objecting to free irrigation of the uterus, as any infected wound should be treated by irrigation and drainage; if bichlorid of mercury douche is used it should be followed up by normal salt solution in order to prevent mercurial poisoning.

THOMAS W. BARLOW urged on the audience their duty to report every case of crime of which they had knowledge, but whether the relations with the patient were such as to deter such action he felt must be decided by the physician in the individual case. He also dwelt on the importance of the coroner's office and the necessity for the continuance thereof.

ASSOCIATION OF AMERICAN PHYSICIANS.

Nineteenth Annual Meeting, held at Washington, D. C., May 10 and 11, 1904.

The President, Dr. W. T. Councilman, in the Chair.

President's Address.

DR. WILLIAM T. COUNCILMAN, Boston, in his address as president, announced the death of Israel M. Dana, Portland, Maine, and paid a tribute to his memory. He then referred to the history of the association, recalling to the minds of the members the fact that during the nineteen years of its existence many papers had been presented which had added materially to the stock of the world's knowledge.

The following committee was appointed to co-operate with the trustees of the Reed Memorial Fund: Edward G. Janeway, New York; William H. Welch, Baltimore, and Frank Billings, Chicago.

The Influence of Suprarenal Extract on Absorption and Elimination.

DRS. S. J. MELTZER and JOHN AUER, New York City, read this paper. The first experiments were made on frogs, in which animals it was found that by the addition of suprarenal extract the tetanic influence of strychnin can be avoided entirely or delayed for one or two hours. This delay and reduction of the symptoms is not in the nature of a chemic reaction, but rather appears to be of a biologic nature. If adrenalin be injected into a frog, the animal becomes paralyzed, which is of a central nature and is not muscular in character. The same phenomenon has been observed in mammals and is explained by delayed absorption. After injecting fluorescin into a rabbit the conjunctivæ, mucous membranes and skin become yellow in from fifteen to twenty minutes. If adrenalin is injected before the fluorescin this reaction is delayed. After the injection of fluorescin the blood serum becomes fluorescent immediately; the injection of adrenalin delays the absorption of the former substance into the blood. Experiments have also shown that adrenalin also delays elimination. This delay of elimination is true, at least, in relation to the kidneys. Possibly in certain cases the use of adrenalin may be found to delay the absorption of toxic materials, for example, diphtheria. It may be found possible to delay elimination when necessary.

DISCUSSION.

DR. W. GILMAN THOMPSON, New York City, said that he had only used adrenalin by intravenous injection in addition to normal salt solution, but that he had never seen any effect on the appearance or composition of the urine follow.

DR. HOBART A. HARE, Philadelphia, said that the duration of the action of adrenalin is very brief and unless given repeatedly he does not see how the effect described by Meltzer can be produced. He has been impressed with the fact that the local application of adrenalin increases the absorption of infectious materials and he believes that its local application in diphtheria would be dangerous. Meltzer said that the effect of adrenalin on the pupil, after removal of the superior cervical ganglion of the sympathetic system, lasts for three or four hours. If the cervical sympathetic be cut the influence of adrenalin on the blood vessels of the ear is not transitory. The influence of adrenalin on non-striated muscle is prolonged.

Polyuria in Typhoid Fever.

DRS. M. HOWARD FUSSELL, H. S. CARMANY and H. HUDSON, Philadelphia, read this paper. A man, aged 40 years, was first seen on the eighth day of the disease. He was extremely nerv-

cus all during the course of the disease and had one slight intestinal hemorrhage. He was bathed at 103 degrees, but was not tubbed. On admission he was passing 1,200 c.c. urine, but on the fourth day after admission he passed 7,000 c.c., and the next day he passed 7,200 c.c. The excretion then fell to 3,000 c.c. and gradually fell to normal during the subsequent course of the disease, but did not reach 1,500 c.c. until convalescence was well established. The urine contained neither albumin nor glucose. At one time salicylic acid was found after the administration of salol. There was no acetone; there was about a normal urea excretion. The patient was seen one year after the attack of typhoid fever, when his urine was found normal in quantity and character. It is usual to find slight polyuria during convalescence from typhoid fever, as pointed out by Murchison and by Osler. Fussell has noted polyuria during convalescence from typhoid fever in only 8 per cent. of his own cases. Exceptionally polyuria has been noted during the entire course of the disease.

DISCUSSION.

DR. GEORGE DOCK, Ann Arbor, Mich., said that there appears to be a retention of fluid in the body followed by polyuria. A temporary decline in the temperature seems to be followed by an increase in the amount of urine. It appears that it is possible to wash out the system with water in febrile conditions.

DR. W. GILMAN THOMPSON, New York City, asked whether the patient was emaciated and whether he had had a previous attack of polyuria.

DR. WILLIAM OSLER, Baltimore, said that polyuria is sometimes associated with local abdominal lesions such as tuberculous peritonitis.

DR. WILLIAM S. THAYER, Baltimore, said that Cushing allows his patients to have very large quantities of water and that they pass large quantities of urine. They seem to do extremely well.

DR. FUSSELL said that no observation had been made on the blood pressure of his patient. It appeared to him that the increased ingestion of water appeared to be due to the polyuria rather than that the contrary is true. The patient was not markedly emaciated. It is not known whether he had a previous attack of polyuria; he has not had one since. The patient was less nervous when he was passing 4,000 c.c. of urine than when he was passing 7,000 c.c. There seemed to be no other connection between the nervousness and the polyuria.

Cases of Venous Thrombosis in the Course of Typhoid Fever.

DR. WILLIAM S. THAYER, Baltimore, said that out of 4,063 cases of typhoid fever there were 39 cases of venous thrombosis and 2 cases admitted to the hospital during convalescence. Five of the cases were fatal; in one there was pulmonary embolism and in another embolism of the inferior vena cava and the right auricle. In 3 of the cases the formation of the thrombus was attended with no fever; in the other 36 cases there was a febrile reaction. In 11 cases, 28.2 per cent., chills were an accompaniment of the beginning of the condition. The first symptom was pain, which varied in intensity. When the femoral vein was the seat of the thrombus the pain was felt in the line of the femoral vessels, in Scarpa's triangle, in the popliteal region or in the calf. Sometimes the pain was sudden and there were also swelling, redness and edema in some of the cases. In 54 per cent. of the cases there was a leucocytosis, the highest recorded figure being 24,864, in a case of iliac thrombosis. The lowest leucocyte count was 2,700 in a case of popliteal thrombosis without fever. In the majority of cases the thrombosis developed during the third week, when the leucocytes should be about 5,500. In one instance the bacillus typhosus was obtained in pure culture from the thrombus. Of 16 patients communicated with after convalescence it appears that there is a more or less permanent disability in all cases. Marked varicosities of the veins of the hypogastrium follow femoral thrombosis. A sudden, severe pain in the lower part of the adbdomen with leucocytosis is indicative of iliac thrombosis.

DISCUSSION.

DR. GEORGE L. PEABODY, New York City, referred to a paper from the Army Medical School at Netley in which the occurrence of femoral thrombosis is said to be due to an increase of calcium salts in the blood, possibly brought about by the large amount of milk given during typhoid fever. It is suggested that the addition of a soluble citrate to the milk may lessen the tendency to coagulation of the blood in a person on such a diet.

DR. ALFRED STENGEL, Philadelphia, referred to two cases of thrombosis of the pulmonary artery. Both cases were thought to be primary. He has noted general symptoms in a number of cases before the appearance of local symptoms.

DR. WILLIAM H. WELCH, Baltimore, said that these cases are probably instances of primary phlebitis from an infection of the walls of the vein with the bacillus typhosus. The organism has been isolated from 70 per cent. of cases of one series.

DR. MORTON PRINCE, Boston, referred to a case in which phlebitis developed before the symptoms of typhoid fever.

DR. CHARLES CAREY, Buffalo, said that in his experience the majority of patients recovered entirely.

DR. W. G. THOMPSON, New York City, said that of eight cases watched from six to ten years, no patient completely recovered. The pulse rate was increased during the formation of the thrombus, which he believes is influenced by the force of the circulation.

DR. JAMES TYSON, Philadelphia, said that in these cases he believes the vascular obstruction is the cause of the pain. He likened it to the pain of angina pectoris and the pain of cramp, which may also be due to vascular obstruction.

DR. WILLIAM OSLER, Baltimore, said that there is a difference between the thrombosis of typhoid fever and phlegmasia alba dolens. The condition seems to be less acute in the former condition. He thinks there are a number of cases in which recovery is complete without varicosities. The ultimate result depends on the anatomic characters of the venous system in the affected region.

DR. THAYER said that among the general symptoms which indicate the occurrence of true phlebitis he had analyzed the relation between pulse rate and temperature in only one case, one of iliac thrombosis. In this the pulse rate was disproportionate. One patient shows intermittent claudication two years after recovery.

Clinical Studies in Arteriosclerosis.

DR. ALFRED STENGEL, Philadelphia, read a paper dealing with cases which do not belong in the senile group and which he calls the pathologic group. The observations were made with the instrument designed by Stanton, which gives systolic and diastolic pressures. In arteriosclerosis the systolic pressure is not always high; but the diastolic pressure, on the other hand, is always high until the myocardium has failed. The sustention of the mean pressure is due to the fact that there is sufficient elastic tissue between the atheromatous areas in the aorta to sustain the pressure in spite of the peripheral resistance. There are no great changes in the blood of these patients notwithstanding the apparent severe anemia; the erythrocytes are high, the hemoglobin is high and the leucocytes are high. This is due probably to the contraction of the peripheral vessels, showing that the process begins in those vessels. The urine is variable in quantity and appears to be independent of the quantity of fluid taken; a fact that may be accounted for by involvement of the glomeruli. The specific gravity also varies considerably, as does the occurrence of albumin and casts. Corresponding with the sustained diastolic pressure there is a sustained, prolonged character of the systolic sound before the myocardial change appears, which is important in diagnosis.

DISCUSSION.

DR. FRANCIS P. KINNICUTT, New York City, said that the blood pressure in senile arteriosclerosis is lower than in pathologic arteriosclerosis.

DR. SOLOMON SOLIS-COHEN, Philadelphia, said that the character of the wall of the vessels, the changes in innervation and the change in the force of the blood can not be recorded by an instrument. Arterial tension and blood pressure are not

synonymous. He lays great stress on the prolongation and the impunity of the first sound of the heart without definite murmur. The urine also shows a tendency to diminution of the excreted nitrogenous toxic materials.

Effects of Cardiac Stimulants, Especially Strychnin, on the Blood Pressure in Febrile Conditions.

DR. RICHARD C. CABOT, Boston, employed the Stanton instrument for recording the blood pressure after the administration of from 1/8 to 1/6 grain of strychnin during twenty-four hours. Five thousand examinations were made in all on 31 cases of typhoid fever, 4 cases of pneumonia and 15 other cases. He finds that strychnin has no influence on the blood pressure in febrile cases. The visit of a friend, the appearance of the dinner tray or change of position would do more to send the pressure up than the administration of strychnin. He does not wish to say that the drug is of no value in these conditions, however.

DISCUSSION.

DR. ALFRED STENGEL, Philadelphia, said that the systolic pressure is sometimes increased by strychnin, but that the diastolic pressure is not changed.

DR. HOBART A. HARE, Philadelphia, said that in his opinion strychnin is not a cardiac stimulant, but that it acts as an irritant to the nervous system in general. He is satisfied that the drug is often abused in typhoid fever and similar conditions. It ought to be determined whether strychnin raises the blood pressure in healthy persons. We ought not to speak of the heart and the vessels as separate parts of the circulatory system. When improvement follows the use of strychnin it is because of its influence on the nerve supply of the circulatory apparatus.

DR. CABOT said that he noted no results when strychnin was suddenly withdrawn.

A Supposed Cause of High Tension in Nephritis.

DR. W. H. THOMSON, New York City, read this paper. High tension pulse occurs so early in nephritis that it must be due to the presence of a general vaso-constricting agent in the blood, similar to adrenalin. Such an agent would cause shrinkage of the kidney and interference with the excretion of urea. The prolonged influence of such an agent would lead to endarteritis, with degeneration of the vascular wall and cardiac changes. Aconite is the best vaso-dilator in nephritis, much more effective that the nitrites. Its use is followed by marked increase in the elimination of urea. In the production of interstitial nephritis ischemia antedates inflammation.

DISCUSSION.

DR. GEORGE L. PEABODY, New York City, said that the administration of aconite does increase the elimination of urea.

Poisoning by Illuminating Gas. A Clinical Study of Ninety Cases.

DR. W. GILMAN THOMPSON, New York City, read this paper. Of the 90 cases studied, all of which had been in coma for at least one hour, 17 were fatal. At this ratio, the 288 fatal cases of illuminating gas poisoning last year would indicate 2,000 as the total number of cases of this form of accident. This frequency is due to the gas stove and the ignorance of the foreign population. He does not think the deprivation of oxygen explains all the symptoms. It is likely that carbon monoxid is a poison having specific action on the nervous system. There appears to be a constant leucocytosis, from 18,000 to 50,000, which persists for a number of days. This leucocytosis is due to the polymorphonuclear cells. There is an increase of chlorids and urea in the blood. There is an irregular temperature in all cases. Respirations often fall to three or four per minute. The nervous symptoms include tremor, twitchings, coma, delirium, convulsions, rigidity, etc. Phlebotomy and saline infusion are in the main beneficial and should be thoroughly used. There were 12 autopsies in the 17 fatal cases. The brain was soft and edematous, there was internal hydrocephalus, softening in the basal ganglia with capillary hemorrhages, and dilation of the cerebral capillaries. Pneumonia was infrequent.

DISCUSSION.

DR. S. WEIR MITCHELL, Philadelphia, said that illuminating gas varies very much in composition in different cities.

DR. ALFRED STENGEL, Philadelphia, said that the experiments of Darrah showed that animals which were severely poisoned could not be saved by venesection and infusion, but that they could be saved by the injection of defibrinated blood. He referred to two cases of poisoning in human subjects, one of which was fatal and the other recovered.

DR. GEORGE L. PEABODY, New York City, said that the treatment by venesection and saline infusion is logical. Defibrinated blood is difficult to obtain and the surgeons often fail to get it into the circulation. The inhalation of oxygen is worthless. He has seen a case in which coma lasted over four weeks, which recovered without sequel.

DR. FRANCIS P. KINNICUTT, New York City, referred to the extraordinary ruddy coloring of the face in these patients. The depth or length of coma can not be considered a basis for prognosis. He has tried oxygen thoroughly without benefit.

DR. HOBART AMORY HARE, Philadelphia, said that with Edward Martin he had concluded that if animals poisoned with illuminating gas breathed pure oxygen gas, more recovered than when oxygen was not employed. Defibrinated blood is procured with difficulty and he fails to see how it could absorb oxygen.

DR. SOLOMON SOLIS-COHEN, Philadelphia, said that carbon monoxid is the dangerous element in illuminating gas. There are other dangerous constituents such as the hydrocarbons of the methane group.

DR. THOMPSON said that the gas varies in the different parts of the city of New York and with the coal supply. Recent investigations show that the carbon monoxid is the poisonous element and that the hydrocarbons are not so poisonous. The effect of the gas on the hemoglobin is not the only effect, although it is important. In many cases of coma the blood is not completely saturated with carbon monoxid.

(To be continued.)

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Lavage in Children.

A. Câille, in the *Post Grad.*, states that the most convenient and at the same time the most thorough way of washing out a child's stomach is by means of a fountain syringe attached to a glass T-canula which has a flexible catheter at one end and a waste tube at the other. The child should be held upright in the nurse's lap with the head secured in the forward position to allow saliva and the vomit matter to escape from the mouth. Care must be observed not to insert the tube into the larynx and the tube should not be so large as to compress the larynx. When the clear cry of the child is heard the tube is not in the larynx. In letting in water the stomach must not be filled to overflowing unless it is necessary to expel large curds which would not go through the No. 12 or No. 14 catheter. Overflowing the stomach is not safe, except when the child's body is bent forward or the child lies on its side. Stomach washing may also be accomplished by having the child swallow warm water in the ordinary way, and subsequently inducing vomiting by the introduction of the finger into the throat.

Lavage, according to Dr. Câille, is indicated in:

Acute gastritis, acute poisoning, cholera infantum, chronic indigestion with atony of the stomach. In difficult feeding

cases. In persistent vomiting, and previous to operations on the stomach.

When it is necessary to simply clear the stomach of its irritating contents a single washing is sufficient. In chronic cases washing every other day is sufficient. The irrigation fluid should be boiled water at the body temperature; occasionally it is well to add a teaspoonful of the bicarbonate of sodium to render the solution alkaline in reaction.

LOW AND HIGH ENEMATA AND COLONIC INFLATION.

A soft rubber catheter should be used to irrigate the colon attached to a fountain syringe. The colon may be distended with boiled water, medicated water, starch water, soapsuds, oil, air or carbonic acid gas. The high enema should be administered through a long colon tube.

Indications for flushing the colon are as follows:

1. To secure bowel action, using soapsuds water one-half to two pints, at a temperature of 101 to 103 F.

2. To stimulate in circulatory failure; to prevent shock and collapse before chloroform anesthesia, and before and after operations.

3. In renal insufficiency, uremia, irrigate for twenty minutes at 110 F. with Kemp's flexible tube.

4. In jaundice, irrigate with cold water at 60 F., or warm water at 110 F.

5. To reduce temperature, irrigate at 60, 70, 80, or 90 F. Cold irrigations depress the heart.

6. To replace lost body fluids, irrigate at 110 F., as in weakness from hemorrhage.

7. To overcome intestinal obstruction.

8. To nourish per rectum.

Low enemata are given with a short tube and have about the same indications as the high injections, but are not so effective. They are sometimes of benefit in subacute local inflammations of the pelvic organs, but are ordinarily employed to secure bowel action.

Cough in Bronchitis.

The following combinations are recommended by *Merck's Report* in the treatment of the cough of bronchitis:

℞ Codeinæ ..... gr. iv |25
Ammon. chloridi ..... 3ii 8|
Syr. ipecacuanhæ ..... 3iiss 10|
Spts. etheris nitrosi ..... 3iiss 10|
Ext. scillæ flu. comp. ..... 3i 4|
Syr. pruni virg. q. s. ad ..... ℥iv 120|

M. Dissolve the codein in about two teaspoonfuls of water with the aid of a small quantity of dilute hydrochloric acid; then dissolve the ammonium chlorid in the syrup of wild cherry and add to the other ingredients. Sig.: One teaspoonful every three or four hours.

As a stimulating expectorant the following:

℞ Ammon. chloridi ..... 3i 4|
Syr. scillæ
Syr. pruni virg., āā ..... ℥ss 15|
Olei anis. ..... gtt. iii 20|
Tinct. sanguinariæ ..... 3i 4|
Mist. glycyrrhizæ co. q. s. ad ..... ℥iv 120|

M. Sig.: One teaspoonful every three hours.

As a sedative mixture the following is of service:

℞ Pot. bromidi
Pot. bicarb., āā ..... gr. xx 1|30
Vini ipecacuanhæ ..... m. xx 1|30
Glycerini ..... 3i 4|
Syrupi ..... 3iv 15|
Aquæ destil. q. s. ad ..... ℥ii 60|

M. Sig.: One teaspoonful every three hours.

Guaiacol in Parotitis.

Ragozzi, in *British Med. Jour.*, recommends guaiacol externally in the treatment of mumps in the following proportions:

℞ Guaiacol ..... 3i 4|
Lanolini ..... 3x 40|

M. Ft. unguentum. Sig.: Apply locally twice a day and cover with oil silk.

It is also of service in the treatment of orchitis from whatever cause, and especially in those cases secondary to parotitis. Its beneficient action is probably due to the neutralizing power on the toxins circulating in the blood. The guaiacol is absorbed for it has been detected in the saliva in fifteen to thirty minutes after its application. This application, in mumps, reduces both the pain and the swelling within a short time after its application.

Cystitis.

The following combinations are recommended by *Med. Record* in the treatment of cystitis:

℞ Liq. potassæ
Olei santali, āā ..... 3ii 8|
Aq. cinnamomi q. s. ad ..... ℥viii 240|

M. Sig.: Two tablespoonfuls three times a day; or:

℞ Potass. bromidi
Sodii bicarb., āā ..... 3iss 6|
Ext. belladonnæ ..... gr. iv |25
Ext. buchu ..... 3i 4|
Syr. sarsap. comp. q. s. ad ..... ℥iv 120|

M. Sig.: One tablespoonful three times a day, in water.

And for chronic pyelitis accompanied by pain the following combination is recommended:

℞ Terebenthinæ (Venice)
Pulv. camphoræ, āā ..... 3iss 6|
Ext. opii ..... gr. v |30
Ext. aconiti rad. ..... gr. iii |20

M. Ft. pil. No. xx. Sig.: One pill every eight hours, with a small glass of the infusion of uva ursi sweetened.

Scabies.

Renault, in *Jour. des Pract.*, recommends the following combination in the treatment of scabies:

Cleanse the skin with a soft soap and an hour later apply the following combination:

℞ Sulphuris sublim ..... ℥i 30|
Potass. carb. ..... 3iii 12|
Adipis ..... ℥ss 15|

M. Ft. unguentum. Sig.: Apply locally and leave in place for twenty-four hours.

As a milder ointment the following combination is recommended after thoroughly cleansing the skin:

℞ Glycerini ..... ℥i 30|
Sulphuris sublim. ..... ℥ss 15|
Pot. carbonatis ..... 3iiss 10|
Tragacanthæ ..... gr. iv |25
Olei lavendulæ ..... m. v |30

M. Ft. unguentum. Sig.: Apply locally.

If pruritus persists after this antiparasitic application the following combination:

℞ Acidi carbol. ..... gr. xv 1|
Glycerini ..... ℥iii 90|

M. Sig.: Apply locally two or three times daily to allay the itching.

Acne.

The following combination is recommended by *Applied Ther.* in the treatment of acne:

℞ Pot. sulphureti
Zinci sulph., āā ..... gr. xx-3iss 1.30-6|
Aquæ ..... ℥iv 120|

M. Sig.: Apply locally as a wash.

As an ointment the following is recommended:

℞ Sulph. precip. ..... 3ss-ii 2.-8|
Ichthyol ..... 3i-ii 4.-8|
Liq. petrolati q. s. ad ..... ℥i 30|

M. Ft. unguentum. Sig.: Apply locally.

The following lotion containing resorcin is of service:

℞ Resorcini ..... 3ss-ii 2.-8|
Acidi borici ..... 3i-ii 4.-8|
Zinci sulph. ..... gr. xx-xxx 1.30-2|
Alcoholis ..... ℥ss 15|
Aquæ destil. q. s. ad ..... ℥iv 120|

M. Ft. lotio. Sig.: Apply locally.

Corrosive sublimate is sometimes employed as lotion in the following strength:

℞ Hydrarg. chloridi corros. ..... gr. iv |25
Zinci sulph. ..... gr. xx 1|30
Tinct. benzoini ..... 3ii 8|
Aquæ q. s. ad ..... ℥iv 120|

M. Sig.: To be applied locally.

Gelatin in Infantile Diarrhea.

Weill, in an abstract in *Ther. Review*, reports excellent results in the use of gelatin in infantile diarrhea. He recommends it in doses ranging from 1½ to 2 drams (6.-8.) daily, which greatly diminishes the number of stools. This proportion is useful only in simple gastro-enteritis in children, and where the trouble affects only the stomach and bowels. The action of gelatin is not bactericidal as bacteria grow on gelatin. It has been proven by animal experiments that if gelatin and a laxative are given simultaneously or if the laxative is given after the gelatin, its laxative effects are interfered with; if the laxative precedes the gelatin, its effects are not modified. The conclusions arrived at, then, are that the gelatin neutralizes the toxic products produced by the disease in the intestines.

Eczema of the Palms of the Hands.

The following combination has been recommended to the Therapeutic Department of THE JOURNAL by Dr. C. C. Gentry of Antrim, Pa., in the treatment of eczema of the hands, especially eczema involving the palms of the hands. Although our attention has not been previously called to a similar combination, it deserves attention on the recommendation of Dr. Gentry. The formula is as follows:

℞. Formaldehyd (40 per cent.) .....gtt. x-xv .65-1
Petrolati .....ʒi 30
M. Sig.: Apply thoroughly night and morning.

Medicolegal.

Rupture of Blood Vessel Lifting Not Accidental Injury.—The Second Apellate Division of the Supreme Court of New York says that in Niskern vs. United Brotherhood of Carpenters and Joiners, the theory of the plaintiff's case, brought to recover a disability benefit, was that on the occasion referred to he was suffering from a hardening of the blood vessels of the body, known in medicine as "arterial sclerosis," and that the strain to which he was subjected in lifting heavy timbers ruptured a diseased blood vessel and produced a condition unfitting him for further labor at his trade. But the court does not think that his testimony, which amounted to nothing more than a statement that he suddenly became dizzy while he was engaged in endeavoring to put up the frame and the rafters upon an addition to a house in course of construction, sufficed to make out an accidental injury within the meaning of the brotherhood's constitution. It says that the most that, by the most liberal inference could be deemed to have occurred was that he put forth an effort in the performance of his work which proved too much for him in his physical condition as then existing, and that he was consequently unable to prosecute his work any further. This result was in no sense an accidental injury.

Health and Custody of Minor Child.—The Supreme Court of California reverses, in re Salter, an order appointing the maternal grandmother guardian of a child five years of age. The finding was that the father had not abandoned his child, and was a fit person to have his care and custody, but that the child was in delicate health and required the constant watching of a competent and experienced person; that his health and welfare would be better promoted by being placed for the greater part of the time in the custody of his grandmother; that the grandmother had a home in Pasadena, where the child could be kept and get the benefit of fresh air and exercise, whereas, if left in the custody of his father he would have no opportunity of being outdoors, except upon the public streets of the city of Los Angeles. The supreme court holds that the right of the father, he being competent, to have the custody and control of his child was not at all affected by the finding relative to the health of the child, and the better opportunity he would have for fresh air and exercise, at the home of his grandmother, than at the residence of his father. It says that even if the father were poor and unable to provide for the child as comfortably as his grandmother could, or would be compelled to maintain him at his place of abode in Los Angeles, under the circumstances found by the lower court, these considerations would furnish no legal ground for depriving him of the custody of the child. They applied merely to its material, temporal welfare, and, if such considerations were controlling, they could, in every instance where poverty was the misfortune of a parent, be invoked to deprive him of his child in favor of one more fortunately situated and better able to minister to its material comfort. Common humanity would be shocked at the serious maintenance of such a proposition.

Burden of Proving Insanity as a Defense to Crime.—The Supreme Court of Washington says, in the homicide case of State vs. Clark, that it was insisted that it is not necessary, in order to sustain the plea of insanity, that the fact of insanity be established by a preponderance of the evidence; but if, on the whole evidence, the jury entertain a reasonable doubt as to sanity, they must acquit. But the jury were instructed that every man is presumed to be sane and to intend the natural and usual consequences of his own acts, and that, as the law presumes a man to be sane until the contrary is shown, the burden of proving insanity as a defense to a crime is upon the defendant to establish by a preponderance of the evidence, and unless insanity is established by a fair preponderance of the evidence the presumption of sanity must prevail. The rule the defendant contended for is sustained by the Supreme Court of the United States and by the highest courts of the following states: Florida, Illinois, Indiana, Kansas, Michigan, Mississippi, Nebraska, New Hampshire, New York, Tennessee, Vermont and Wisconsin. On the other hand, the highest courts of the following states maintain the rule that, where insanity is set up as a defense in a criminal case, it must be established by a preponderance of the evidence: Alabama, Arkansas, California, Connecticut, Delaware, Georgia, Idaho, Iowa, Kentucky, Maine, Massachusetts, Minnesota, Missouri, Nevada, New Mexico, New Jersey, Ohio, Pennsylvania, South Carolina, Texas, Utah, Virginia and West Virginia. The rule in England is followed by the last-named class of states. In the states of Oregon and Louisiana the defendant is required by statute to prove insanity beyond a reasonable doubt. And, notwithstanding the weighty reasons advanced by the courts in the class first named, the Supreme Court of Washington says that it desires to adopt the rule laid down by the trial court in this case. It says that it will be seen by an examination of the authorities cited that the cases in the different states are in irreconcilable conflict as to the quantum of proof upon the question of insanity. All, however, concede that the presumption of sanity prevails, and that there must be some evidence to remove this presumption. In the first class of cases it is held that, where the evidence raises a reasonable doubt as to the sanity of the defendant, he must be acquitted; in the other, that a reasonable doubt is not sufficient, but the defendant must establish insanity by a preponderance of the evidence. In the first class named the reason for the rule is that the presumption of innocence always attends an accused person, and that the burden of proving all the elements of the offense rests upon the state, and never shifts; that, when the defendant's sanity is put in issue, the state must prove it beyond a reasonable doubt, because, without a mind capable of crime, there can be no crime committed; and therefore, if the jury entertain a reasonable doubt as to the sanity of the accused, it follows that they are in doubt as to his guilt. The reason for the rule adopted in the other class of states is that sanity is the natural condition of man, and therefore every man is presumed sane until the contrary is made to appear; that when the commission of a crime is admitted or clearly proven, and insanity is alleged as a defense, it being an independent, affirmative defense, and opposed to the natural and usual order of things, must be established by a preponderance of the evidence. Another reason given is that the presumption of sanity is necessary for the wellbeing, safety and protection of society and for the administration of justice, and neutralizes the presumption of innocence on which the rule of reasonable doubt rests, and

therefore leaves the accused, when asserting his insanity, to show the fact by a preponderance of the evidence. Another reason for the rule is that it is the only safe rule for society, while it is also just to the accused. The distinction between the quantum of proof necessary to raise a reasonable doubt and that necessary to constitute a fair preponderance of the evidence is more fanciful than real. When evidence is sufficient to raise a reasonable doubt, as such doubt is usually defined and understood, it may also be said in a sense to proponderate. The distinction, therefore, while it may be fruitful of philosophical and theoretical discussion, is of little practical value. Insanity, when it exists as a fact, is easily and readily proved. When it does not exist in fact it is easily feigned and difficult to disprove. For this latter reason it is the usual defense when there is no other. It is no injustice to a defendant to presume that he is sane, and to require him to prove the unnatural condition of mind, which he alleges as a defense for a crime admitted, and to relieve him from a penalty justly due to men in their natural condition.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

May 7.

1 *The Diarrheas of Infancy and Early Childhood. Thomas M. Rotch.
2 Examination of the Test-breakfast. Mark I. Knapp.
3 *Two Fatal Cases of "Landry's Paralysis," with Autopsy Findings in One of Them. Theodore Diller.
4 *Removal of Septal Spurs and the Correction of Deviations of the Septum by More Rational Methods. Charles N. Spratt.
5 *Efficiency of Local Treatment as a Factor in the Cure of Laryngeal Tuberculosis. Ross Hall Skillern.
6 *A Modification of Existing Methods for Staining Flagella. O. P. Johnston and W. B. Mack.
7 Address to the Members of the Philadelphia Pediatric Society, at Its Eighth Annual Meeting, Jan. 12, 1904. D. J. M. Miller.

1. **Infantile Diarrhea.**—Rotch reviews the symptoms and characteristics of infantile diarrhea, summing up the facts that we are warranted in accepting up to 1897 in substance as follows: 1. There are no uniform symptoms enabling us to diagnosticate the special lesions of acute or chronic cases. In the latter it is not only impossible to determine what part of the enteric tract is affected, but even to state definitely that there was a primary specific lesion of the intestine or any marked lesions present. 2. In the acute cases it was possible to determine usually whether the small or large intestine was most involved, this being done by the small number and comparatively large size of the dejecta representing the small intestine and the large number and small amounts from the large intestine. 3. The temperature is of considerable aid in differentiating the non-inflammatory diarrhea represented by the fermental group, from the inflammatory diarrheas represented by the ileocolitis group. There are no marked lesions in the former, but they are present in the latter, the temperature is high, followed by crisis in the former and high or moderate, decreasing by lysis, in the latter. 4. Knowing where the stress of the lesion is situated our treatment should be by the mouth in diseases affecting the upper intestine and usually of the fermental class and by the rectum in diseases involving the lower part of the intestine and ordinarily of the ileocolitis type. 5. Pus or pus and blood in the intestinal contents are usually of serious import as pointing toward grave pathologic lesions. New light, however, has been thrown on the subject of late years by studies, especially in Japan. The part played by the bacillus of Shiga is noted at some length. During the past summer Rotch had special work done for him at the Infants' Hospital, Boston, for detecting this organism. In all the 61 cases examined when the bacillus was found the organism isolated was the "Mannit acid type," the same as found by Park in the Bronx epidemic. The differences between the Mannit acid type and the Shiga type are pointed out at some length and an analysis of the 61 cases shows that the *Bacillus dysenteriæ* was the cause of 16 per cent. of all the 61 cases examined. It may give rise to either the fermental diarrhea or that known as ileocolitis. In 30 per cent. it was found to produce the former, in 70 the latter. A causal connection, however, was demonstrated only in 6 per cent. of the fermental diarrheas examined, but on the other hand the *Bacillus dysenteriæ* is probably the most frequent cause of cases examined. The symptomatology outside the bacteriologic findings is not as yet to be relied on and the presence of specks of blood in the intestinal contents does not necessarily mean infection, nor is a high or low leucocyte count of diagnostic value. The distinction between the fermental diarrhea and the ileocolitis is probably connected with the extension of the pathologic process and this depends on the nature of the infecting organism and the severity of the infection. Infectious diarrheas are probably caused by a variety of organisms and the *Bacillus dysenteriæ* is only one of these, but can be most often connected with a condition corresponding to ileocolitis. The prognosis depends on our earlier clinical knowledge. Pus in the dejections is of serious import and the degree of general sepsis is to be carefully considered and estimated. There has been no great advance in the treatment. It is probable that the success will be best, as formerly held, by the mouth treatment when the small intestine is affected and through the rectum when the large one is affected. He thinks it rational to give bismuth, bearing in mind its limited therapeutic properties. Clearing the intestines of bacteria by laxatives, supporting the strength and combating the nervous symptoms and fever are the chief indications. The serum treatment is, of course, experimental. As tested on animals it is very effective, but so far as the Shiga serum was concerned, we have no special evidence that it can be of much aid in mixed infection. In conclusion he remarks on the importance of treating at once what may seem to be even the most simple form of diarrhea.

3. **Landry's Paralysis.**—Two cases are reported by Diller, both of longer than the usual duration. In the first case it would seem that the lower motor neuron was progressively involved from below upward. The anatomic changes with their resultant symptoms might have been due to alcoholism. In the second case there was a progressive paralysis from below of purely motor type for the first four months while enlargement and tenderness of the nerve trunks were features of the last two months of the illness. This case he considers as a neuritis or rather more than a neuritis. It seems likely that the entire lower motor neuron was involved as in the first case. The sudden severe pain at the onset was a striking feature.

4. **Septal Spurs.**—Spratt advocates the use of the flap operation method first published by Heylen in 1847, consisting of first reflecting a flap of mucous membrane from the projection and removing the cartilage or bone with scissors. He declares that this is scarcely ever employed at the present day, but that with adrenalin and cocain it is perfectly practicable and easy. The advantages over the usual methods are the early healing in three or four days; adhesions are impossible, as no raw surfaces are left, and there is no fear of scab formation. Perforation is a complication that need never occur. This window resection operation, he says, can generally be done in 25 or 35 minutes, and the difficulties appear greater than they really are.

5. **Laryngeal Tuberculosis.**—The following are the conclusions reached by Skillern:

1. Local treatment is always beneficial even if it only relieves the most distressing symptom, *i. e*, pain.
2. It depends entirely on the general condition of the patient what form of local treatment is most advisable.
3. While laryngeal tuberculosis in some cases may be entirely cured, there always remains more or less chronic laryngeal catarrh.
4. That extensive surgical procedures in cases in which the lungs are deeply involved except as a palliative treatment are unjustifiable.
5. That extensive curettement should only be employed in those cases in which there is a fair chance of curing the disease and when it is necessary to prolong life a short time.
6. The prognosis depends more on the general systemic condition of the patient than on the throat lesion. It naturally follows that the more severe the throat lesion the greater the degree of constitutional weakness.
7. If a case is seen at an early stage of its development, the

prognosis is good provided of course the concomitant lung disease is responding to treatment.

8. When there is much ulceration and loss of tissue, absolute cure is impossible, but such an amelioration of symptoms may be brought about as to render the patient fairly comfortable for the rest of his existence.

9. The best results are obtained when the tuberculous deposit in the larynx is localized.

6. **Flagella Staining.**—After giving their method Johnston and Mack remark that the essentials are: A clean cover glass, but little organic matter in the film to stain and no heavy background, avoiding fixing the film in the flame, but allowing the mordant to fix it, avoiding heating either mordant or stains on the films, as it tends to produce a precipitate and background. Finally, the all-important prerequisite is to have a film containing organisms with flagella extended. This condition fulfilled, no special technic is required other than the use of mordant.

Medical News, New York.

May 7.

8 *The Diastolic Murmur in Diagnosis. Austin W. Hollis.
9 *Influence of Bovine Tuberculosis on Human Health. Mazyck P. Ravenel.
10 *Clinical Aspect of Chronic Myocarditis. John W. Bell.
11 *Acute Appendicitis and Its Medical Treatment. G. N. Best.
12 *Summary of an Experimental Research Into the Use of Alcohol, Nitroglycerin and Amyl Nitrate in Shock and Collapse, with Illustrative Protocols. George Crile.

8. **Diastolic Murmur in Diagnosis.**—Hollis describes the variations in diastolic murmur in aortic and pulmonary insufficiency, persistent ductus arteriosus, aneurismal diastolic murmurs, mitral stenosis, cardiorespiratory influences and pericarditis and pleuropericardial conditions. The details are too elaborate to permit of abstracting in the space we are able to give. Six cases are reported illustrating some of the types.

9. **Bovine Tuberculosis.**—Ravenel points out the possibilities of infection of the human subject by bovine tuberculosis and claims that Koch demands a higher standard of criticism than he is willing to have applied to himself in his comments on the cases that have been published. His conviction is that the two diseases are essentially the same and intercommunicable, and that cows with tuberculosis of the udder are not alone to be dreaded. While at the present time the weight of evidence is in favor of the view that the chief source of infection in children is through the respiratory passages by the human tubercle bacillus, he thinks it has been proven conclusively that the bovine tubercle bacillus is responsible for a certain proportion of deaths from tuberculosis and there is strong evidence, he says, to show that the number of children infected from bovine sources is quite large. Whether large or small, it is our duty to guard against the use of milk from tuberculous cattle for food.

10. **Chronic Myocarditis.**—Bell discusses myocarditis in its broadest sense, including any conditions manifesting themselves clinically in the weakened myocardium resulting largely from fibroid or fatty changes in persons at or beyond midlife. He finds it more frequent in men. The long-continued, even moderate, use of alcohol, together with tobacco, is one of the most potent factors in its production. Gout or gouty diathesis and syphilis are also often responsible for the condition. The rational symptoms are at first vague and death may occur suddenly without evidence of symptoms or physical signs. Breathlessness, amounting to dyspnea on exertion, is one of the earliest and most constant symptoms. Slight vertigo, headache, precordial distress, palpitation and later attacks of angina are among the more common symptoms. The pulse becomes irregular in rate, rhythm and force, perhaps intermittent. Slight overwork of the heart produces attacks of palpitation and later attacks of severe cardiac asthma, especially at night. In other cases the breathing is of the Cheyne-Stokes type, and in still other cases precordial pain occurs. Unless the condition is promptly recognized, it gradually increases. In the beginning of every suspected case a complete history should be taken, especially as to age, family tendencies, habits and previous disease. The urine should be carefully investigated for renal disease. The diagnosis is based largely on the history, age, state of the vessels, and symptoms. As to the exact nature of myocardial changes present, we can only infer. He divides the clinical course into two periods as regards treatment: 1, primary breathlessness, precordial distress and irregular pulse; 2, advanced weakness and the more serious symptoms. Each case should be studied by itself. The first endeavor should be to remove every cause of cardiac irritation; second, regulate the diet, exercise and habits so as to bring the general nutrition as well as that of the heart muscle up to the highest point. In addition to hygienic and dietetic measures, tonics such as strychnin, arsenic, etc., are indicated. In the early cases when the pathologic changes are not very far advanced, graduated exercise is often beneficial. In the great majority of cases, however, absolute rest in the recumbent position is necessary for at least a few weeks. The patient should be advised to sleep and eat regularly, taking three meals a day. It is attention to such little things as eating, drinking and doing which secures success. Before the use of saline baths, advanced arterial fibrosis and aneurism must be excluded, as also advanced cardiac insufficiency with dropsy. He begins with a bath of ten minutes' duration in water at 98 degrees and 1 per cent. saline and 1/10 per cent. calcium chlorid. The second bath is gradually lowered to 90 and the subsequent ones are kept at that temperature, gradually increasing the chlorids, and carbonic acid added by the tenth day. He continues the baths for five or six weeks, omitting every fourth day. In advanced cases absolute rest in bed must be enjoined. For reduction of the high arterial tension in many cases we rely mainly on the iodids and nitrites. He has found iodid of sodium in 3 to 5 grain doses three or four times daily very useful. He emphasizes the value of long-continued, very small doses of digitalis combined with a vasodilator in myocardial disease or arterial fibrosis or chronic renal disease. With irritable stomach and scanty urine and high blood pressure it may be given by the rectum with good results. A saline in the morning, preferably magnesia sulphate, aided by an occasional bedtime dose of calomel, is also excellent. When angina pectoris occurs prompt inhalation of amyl nitrite and the subcutaneous use of morphin and nitroglycerin is advised. The attendant should instruct the nurse how to administer these in case of emergency. In conclusion he emphasizes the importance of recognizing the earliest symptoms.

11. **Appendicitis.**—Best advocates under certain conditions which are unavoidable in general practice, the use of medical treatment in appendicitis. The mortality, he thinks, may be fairly approximated somewhere between 10 and 15 per cent., and he holds that the results of surgical treatment are a little higher than its ardent advocates claim at the present. He believes in the majority of cases abscess opens into the intestine and the patients recover. Where it ruptures into the peritoneal cavity surgical interference is always indicated. Fulminating cases are frequently those which the surgeon does not see in time and the medical practitioner sees too soon for his own comfort. They usually terminate fatally under either medical or surgical treatment.

12. **Shock.**—Crile reports experiments with alcohol, nitroglycerin and amyl nitrite in shock, using the drugs by intravenous administration. With alcohol the first effect was a decline in the blood pressure; in the majority of cases a compensatory rise followed, but in a number of instances this was lacking. In very few was there a rise in the blood pressure. In animals reduced to varying degrees of surgical shock, the usual effect of an average dose of alcohol was still further depressing. In smaller doses little effect was noticed. In a few cases, in deep shock, a considerable dose was followed by almost immediate death. The more profound the shock the more marked the depressing effect of the alcohol. In a number of experiments alcohol was given prior to the procedures intended to produce shock, but he is not sure that it rendered the animal more susceptible, though he is quite certain that the susceptibility was not diminished. The immediate effect of nitroglycerin and amyl nitrite on the pulse was an increase of volume and a decrease in frequency. Sometimes the respiration was slightly increased, but more frequently diminished. The blood pressure in almost every instance fell, and usually rapidly. In a few exceptions there was no effect. A rise in the blood pressure was rarely observed, and was then

only temporary and usually followed by a fall. Compensation usually took place in a few minutes, the rising curve being more gradual than the fall. The portion of the curve representing the deepest part of the decline was rounded. In the majority of experiments compensation was complete. Where it was not equal to that before the administration of nitroglycerin, it was usually lower, and when repeated doses were given—each twice as large as the preceding one—the effects were proportionately increased. Most of the animals tolerated very large repeated doses; excessive doses produced convulsions and respiratory failure, and the blood became darker before the animal died. Where the animal was in deep shock and the blood pressure gradually falling there was no evidence to show any decrease in the rapidity of the decline. As near as can be estimated, nitroglycerin distinctly increases it and amyl nitrite was in every respect similar in its effects to nitroglycerin. On the whole nitroglycerin and amyl nitrite increase the shock. The experiments appear to have been performed exclusively on dogs.

Boston Medical and Surgical Journal.

May 5.

13 *Contribution to the Etiology of Idiocy and Imbecility. William N. Bullard.
14 A Sigmoid Band of Unusual Origin. Operation. Relief. Arthur L. Chute.

13. **Idiocy and Imbecility.**—In the 258 cases examined in the neurologic clinic of the Children's Hospital of Boston, there were 176 where the question of an acquired or congenital defect could be determined. Of these 113 were congenital and 63 were non-congenital or acquired cases. This fact was somewhat of a surprise. The etiology of the non-congenital was much simpler than the congenital. About 13 per cent. were probably traumatic, possibly as many as 19 per cent. Disease played a notable part in a number of cases. There were a number in which post-natal disease was the most potent cause, but the evidence was not absolute, and examples are given. The nature of the disease causing imbecility or idiocy is not always clear, but that it is intracranial is evident, and congenital cases are divided into intranatal or prenatal. Bullard is inclined to attribute the great majority of them to the prenatal rather than the intranatal cause. The only clinical evidence of the latter would be a direct history of accident or injury and the occurrence of unconsciousness, convulsions or acute cerebral symptoms immediately on birth as indicating this probability. Out of 38 cases in which the cause was probably or possibly intranatal in 18 cases forceps were used, but he has not been able to find any evidence of injury from the forceps. He thinks delay in the use of the instrument is just as likely to produce the condition as their unskillful employment. Among the prenatal cases there is a small number in which they had data in relation to conditions during pregnancy. In 11 there was a history of much worry on the part of the mother; there were 9 cases in which the mother had a more or less severe fall and 2 other cases of trauma; there were 3 cases of illness of the mother at the time and 2 in which the mothers were very weak, but with no definite disease and 1 where the mother was over-worked in a factory. He considers these a most important group for investigation from an etiologic point of view. Heredity is undoubtedly a potent factor, but the number which could be absolutely determined as probable was apparently not very large. Syphilis in the parents and alcoholism are other important factors. The latter, however, is often complicated with the former. Maternal uterine disease Bullard considers a very important cause, and many unexplained cases may be due to it. Some 12 cases of hydrocephalus are noted with reference to the question of the cause. These statistics, Bullard remarks, are only preliminary to those which he hopes to obtain in the near future.

New York Medical Journal.

May 7.

15 *The Significance of Parenchymatous Change in the Kidneys. H. A. Tomlinson.
16 *Juvenile Tabes with a Case of Tabetic Symptoms in a Girl Aged 17 Years, Who Presented from Infancy a Brachial Monoplegia, Probably of Poliomyelitic Origin. Alfred Gordon.
17 *Experimental Researches on Resuscitation After Death from Chloroform. Massage of the Heart by Various Methods. Prolonged Infusion. Exhibition of Hoyt's Pump and of the Kemp-Gardner Modified Intubation Tube for Artificial Respiration, etc. (To be concluded.) Robert Coleman Kemp and A. W. Gardner.
18 Arteriosclerosis of the Central Nervous System; with Report of Five Cases. Theodore Diller.
19 *Preliminary Note Concerning the Reduction of Diabetic Glycosuria with Pancreas-Hemoglobin-Muscle Extracts. Alfred C. Croftan.
20 Diabetes in Childhood. Hubert N. Rowell.
21 The Diagnosis of Smallpox in the Papular Stage. (To be concluded.) D. H. Reed. A. G. Miller and S. J. Bumstead.

15. **Parenchymatous Change in the Kidneys.**—Tomlinson concludes from clinical experiences, which have been largely verified by a study of similar conditions, experimental and otherwise, in the lower animals that there is as much difference in the kidney capacity of different individuals as there is in that of their other vital organs and the nervous system; that some individuals are born with defective kidneys, not necessarily anatomically, but functionally imperfect, and that in such chronic degenerative processes may be set up early in life. They are always to some extent victims of chronic autointoxication because of imperfect elimination, and in these the irritation resulting from retention of waste products of retrograde metabolism favors a chronic congestion of the kidneys, so that from causes that do not seriously affect an ordinary individual, there may and does arise, acute involvement of the parenchyma of the organs, checking elimination and resulting in more or less explosive outbreaks involving the whole organism, especially the nervous system.

16. **Juvenile Tabes.**—Gordon reports a case in a girl who had marked tabetic manifestations superimposed on acute anterior poliomyelitis in infancy. This adds another case to the few of juvenile tabes, and shows that hereditary syphilitic tabes and acquired syphilitic tabes are identical in their symptomatology.

17. **Resuscitation After Death from Chloroform.**—Kemp and Gardner discuss the subject of heart massage, giving credit to Schiff and possibly Ludwig, though as far as its application to the human subject is concerned, Prus can claim priority. They give the details of their experiments and discuss the limitations of the usual methods, describing the different methods of massage. The first consists in trephining the sternum and compressing the base of the heart against the chest wall. This, however, will be impracticable in the human subject. 2. Resection of several ribs and insertion of the hand into the left thorax and rapid compression of the heart. The objections to this are the greater tendency to shock and some danger of tearing the pericardium. The third method, which is the most rational and safe, is placing the animal in the Nélaton position. This thrusts the heart forward against the chest and somewhat upward. An incision is made over or slightly below the apex. If more space is required a small piece of the fifth or sixth ribs may be resected. The index or middle fingers are passed over the margin of the heart and behind it, near the apex, and pressure made on the heart against the chest; or, the opening being enlarged, the fingers may be placed behind and the thumb between the apex and chest wall, and the heart squeezed rapidly between them.

19. **Glycosuria.**—Croftan has succeeded in preparing a pancreas-muscle-hemoglobin extract by coagulation with alcohol, mixing in varying proportions, while the tissues are still warm. He has used this in several cases in the hospitals, noting a marked decrease of glycosuria in cases of diabetes. He says he will not attempt to discuss the character and composition of the active principle that can pass unchanged through the stomach and bowel into the blood stream beyond and there have its effect, but calls attention to the resemblance between this preparation and thyroid. In both cases, he says, we are dealing with substitution therapy and supplying something that is lacking. Whether or not the ultimate effect of the pancreas preparation in diabetes will be curative as thyroid is in myxedema, remains to be determined, and he suggests that by giving these extracts the inherent sugar-destroying power of the organ might be granted a rest, and this act beneficially by restoring the normal tone and educating the perverted glycolytic function back to normal.

Medical Record, New York.

May 7.

22 *Physiologic Function of Menstruation and the Part Played Therein by the Fallopian Tubes. J. Riddle Goffe.
23. Gallstones in the Common Duct. A. H. Cordier.
24 *Dentigerous Cysts. Charles Greene Cumston.
25 A Case of Recurring Membranous Stomatitis, Associated with Erythema Exudativum Multiforme (Hebra). Louis E. Blair.
26 The Hospital Car; Its Equipment, Uses and Importance. William W. Sanford.
27 The Prevention of Disease. John B. Huber.
28 *The Syrian Climates. Hanna M. Rahmi.

22. **Menstruation.**—Goffe holds that menstruation is a result of ovulation, and that it is in fact what it has already graphically been called "a disappointed pregnancy." The dominant factor is the ovary and ovulation. From the ovary or its sympathetic nerve ganglia in the pelvis and abdomen there springs the reproductive impulse, but menstruation is a retrograde process, the result of a failure of fertilization of the ovum, and he believes that the mucous membrane of the tubes, as well as the endometrium, participates in the process.

24. **Dentigerous Cysts.**—Cumston reviews the origin and pathology of these cysts. He declares that they are benign in every respect. The treatment is simply to open them after diagnostic puncture and remove all vestiges of lining membrane. Otherwise relapse is practically certain. In order to do this the cavity should be freely exposed by a large opening, and the curette, scissors and, if necessary, the thermocautery used. If any epithelial cells remain they may be a source of recurrence. After the cavity has been thoroughly cleared, it should be plugged with gauze for a few days so that the epithelium of the buccal mucous membrane and the granulations arising within the cystic cavity unite when the latter become filled. Any tooth or root protruding into the cyst should be removed. In large cysts it may be necessary to drain through the floor of the nose. In the lower jaw it may be impossible to attack the tumor by the buccal cavity and a cutaneous incision is required and here sufficient resection of the outer shell of the bone should be made.

28. **The Syrian Climates.**—Rahmi describes the different climates which can be reached within a few hours by means of the Beirut and Damascus railroad, including the mild subtropical shore climate, the Alpine Lebanon climate, the sedative moist mountain climate of the western slope and the dry eastern slope. He thinks that Syria, in the region around Lebanon, has a combination of climates without equal anywhere else in the world.

St. Louis Medical Review.

April 30.

29 *A Sketch of the Past and Future of Embryology. A. C. Eycleshmyer.

29. **Embryology.**—Eycleshmyer's article is a historical sketch of the development of embryology, with a statement of the recent theories and advances. Embryology of the future will have to advance on both morphologic and experimental lines. There is much yet to be known of embryology of the lower vertebrates and of the development of changes in the mammals. As to the human species there are great gaps in our records. There is not extant, he says, a description of a single vertebrate in which the organs and tissues have been followed until they reached the mature condition. We shall some day be able to follow the life-cycle of organs, tissues, cells and structural changes and thus have a basis for the interpretation of structures in disease. Still greater advances are to be hoped for along the lines of experimental embryology and the task for the future lies in the interpretation of the physical and chemical changes, explaining the growth and changes in the organs, etc.

Cincinnati Lancet-Clinic.

May 7.

30 Cardio-vascular and Blood-states as Factors in Nervous and Mental Disease. F. W. Langdon.
31 A Necessary Preliminary Step in the Treatment of Some Cases of Chronic Seminal Vesiculitis. Charles C. Miller.

Buffalo Medical Journal.

May.

32 Sterility and Its Treatment. Herman E. Hayd.
33 *Animal Therapy in Tuberculosis. Edward T. Smith.
34 Typhoid Fever. Thomas Bagley.
35 Prostration of the Circulation. Louis Faugeres Bishop.

33. **Animal Therapy in Tuberculosis.**—Smith gives a report of the use of lymph prepared from the spermatic fluid of a young bull, which was gathered for a considerable time, and during which the animal was confined and fed on grain to develop the lymphatics. After bleeding the animal to death, the grey cerebral substance, the spinal cord, the ganglia, the lymph in the reservoirs and ducts and the mesenteric lymphatic glands were taken and with the addition of the semen, the mixture thoroughly triturated in a ball mill with an equal amount by weight of distilled water and half a grain of sublimed albuminate of gold to the ounce, added as a noncoagulant and preservative. The trituration was carried on for ten hours continuously, and after that time, microscopic examination showed the entire disintegration of the spermatozoa, lymphocytes, nerve cells and lymphatics; the emulsion was filtered through a porous filter at high pressure and afterward treated with ether or cold to remove the fats. It was then sterilized by carbonic acid gas under pressure. It is a clear, thick albuminous liquid and a true extract of the organs and secretions stated. Prepared with rigid antisepsis it is hard to contaminate and will keep for months if placed in an amber-colored glass stoppered bottle and kept in a dark, cool place. The compound is injected hypodermically in tuberculosis to the exclusion of all other remedies, preferably in the center and outer parts of the buttocks, subscapular spaces, and along the sides of the spinal column. The injections were given deeply, into the connective tissue, and not into the muscle, and left no induration. The dangers are superficial injections, haste, deficient massage, uncleanliness and too much force in the injection. If there is any pain from the injection, the solution should be dissolved with boiled or distilled water, but it is generally painless and he has had no ill results in thousands of injections. The dosage varies with the individual. In some severe cases he has given as much as ten minims every four to six hours until the severity of the symptoms is abated. Then the periods are lengthened. In other not so acute cases he has had good results from one daily injection of 20 minims. The usual dose is 15 minims night and morning. He insists on a plain nutritious diet, excluding raw fruits as well as vegetables, as they leave much residue. Constipation is generally overcome by the tonic effect of the lymph on the muscular coat of the bowels. It is a cell tonic and reconstructive. The treatment is kept up for three months or longer if it seems advisable. He reports cases of advanced consumption with hemorrhages, cavities, etc., cured by this treatment.

Archives of Ophthalmology, New Rochelle, N. Y.

March.

36 *Diffuse Sarcomata of the Uveal Tract. J. Herbert Parsons.
37 Epithelial Cystoma of the Conjunctiva (Dermo-epithelioma of Parinaud). Edward L. Oatman.
38 A Choroidal Sarcoma which Spread in a Peculiar Manner and Contained Cholesterin Crystals. Brown Pusey.
39 *(1) Osmotic Disturbances as the Cause of Glaucoma. (2) Experimental Production and Clearing of Cataractous Lenses. Brown Pusey.
40 A Subconjunctival Angiofibroma of the External Rectus, with Hyaline Degeneration. J. Gonin.
41 Case of Persistent Edema of the Eyelid Due to Syphilis. E. F. Snydacker.
42 Case of Primary Sarcoma of the Ciliary Body. James W. Barrett and W. F. Orr.

36. **Sarcomata of the Uveal Tract.**—These rare conditions are studied by Parsons, who tabulates and analyzes all the cases he has been able to discover in the literature.

39. **Osmotic Disturbances in Glaucoma.**—Pusey makes the suggestion that variation in the osmotic capacity of fluids may be the cause of some cases of glaucoma. He thinks it seems probable that in varying osmotic pressure (probably a hypertonic condition within the globe) we have the explanation of the primary cause of the condition. Carrying out his experiments to determine this fact in sheep's eyes a striking change was found in the lenses. In certain concentrations of salt and sugar the lense became cataractous. A still more startling experiment was the clearing of the cataractous lenses of the salt solution by putting them in a weak solution of the salt or in distilled water and leaving them there for some hours. He thinks that some interesting fields of study and suggestions as to treatment are opened up in this investigation.

Journal of the Kansas Medical Society, Topeka.

May.

43 *Effect of Flood of 1903 on the Health of the Kaw Valley. M. A. Barber and John G. Woodin.
44 Eclampsia. M. T. Dingess.

43. **The Flood of 1903 in Kansas and Its Effects on Health.**—Barber, who is professor of bacteriology in the School of Medicine of the University of Kansas, sent out, in conjunction with John G. Woodin, a medical student, a large number of inquiries through the flood affected district as to the general effects on the health during the past year, the numbers of cases of typhoid fever since June 15, 1903, and in the corresponding period of 1902, and what proportion of these seemed due to the standing water, decaying drift, etc. Similar questions were asked in regard to malaria and other diseases. In all, about 60 answers were received. Some of the information given is that the number of typhoid cases has decidedly decreased in the latter of the two years, while there has been a slight increase of the malarial cases. In other respects there has been very little difference. The proportion ascribed to standing water is not strikiingly large in either year; both were wet years. It is difficult to summarize the opinions of physicians concerning the effects of the flood on the health as all do not give positive answers, but of those who do, scarcely 9 per cent. believe that, aside from the disorders due to the immediate effect of the flood such as nervous troubles, rheumatism, colds and the like due to exposure, it had any particular effect on the prevalence of disease. In a number of the replies the season of 1903 was accounted an unusually healthy one and eight of the respondents were of the opinion that the flood had had a beneficial effect in washing out the accumulated filth in cellars, ponds, etc. It should be remembered too that in most of the towns vigorous sanitary measures were taken after the flood and that these may have served not only to avert the dangers but to increase the general health. There was reason to believe that in some communities, at least, its effects were those of a beneficial, though a rather indiscriminate scavenger. It left standing no water or anything else, as one expressed it.

Archives of Otology, New Rochelle, N. Y.

April.

45 *Middle-ear Disease in Its Relation to Metastatic Abscess of the Liver and Other Viscera. S. MacCuen Smith.
46 A Contribution to the Pathologic Anatomy of the Internal Ear and the Auditory Nerve. Paul Manasse.
47 Contribution to the Pathology and Treatment of Diseases of the Accessory Nasal Cavities. F. Roepke.

45. **Middle Ear Disease in Its Relation to Metastatic Abscess and Other Viscera.**—Three cases are reported at length, and others have been observed by Smith, which point out to him the connection between liver abscess and otitic disease. In these cases the most notable early symptom was acute exacerbations of a chronic aural discharge, which, although usually innocuous, in a few cases became ichorous and should have pointed to a possible systemic infection. The most constant and characteristic symptom was severe pain in the right shoulder and neck appearing synchronously with the beginning of the hepatic suppuration. The pain and tenderness in the right hypochondrium unerringly indicated the liver as the seat of disease. The repeated chills, high temperature, and leaky skin showed the septic process likely to prove fatal. The marked accessions and remissions of temperature were typical of an acute suppurative hepatitis or multiple abscess of the liver. While jaundice was a constant factor, it was so irregular as to be of little diagnostic value, save as confirmatory. The history of secondary infection in each of the cases is sufficiently clear to warrant the conclusion that a metastatic abscess of the liver or other viscera might originate from suppurative disease of the ear.

Journal of Cutaneous Diseases, New York.

May.

48 Report of a Case of Bullous Lichen Planus. (Lichen Planus Pemphigoides). Martin F. Engman.
49 *Creeping Eruption: Its Relation to Myiasis. Louis P. Hamburger.
50 *Report of Personal Case of Papilloma of the Sole. T. D. Berry.
51 *A Rare Bromid Eruption. Lotta W. Myers.

49. **Creeping Eruption.**—Hamburger reports a case in an imbecile boy of four years in whom no parasite was found, though after extirpation of the advancing end it made no further progress. He reviews the literature and the Russian claim of having discovered the larvæ of a fly on the family of the *æstridæ* which, however, has not been discovered elsewhere. The species has not yet been determined. The general symptoms of myiasis are noted and discussed to some extent. He thinks the condition of special dermatologic importance. It remains for future investigation to say whether all such eruptions are the result of the infection of the bot fly, but he thinks there can be little doubt that some dipterous larva is the causal agent.

50. **Papilloma of the Sole.**—Berry reports his own case and the difficulties which he had in treating it by mild or expectant measures. He finally determined to thoroughly eradicate the growth, disregarding the danger of tender cicatrix. After cocainization of the part every vestige of the wart was burned out entirely through the skin of the sole and into the fatty cushion beneath until there was a hole left in which the blunt end of a lead pencil could have been inserted. There was little pain after the cocain wore off and he was able to stay on his feet the next few days. The treatment proved successful. There has been no troublesome scar and no recurrence of the papilloma.

51. **A Bromid Eruption.**—Myers reports the case of a vesicular eruption in a child who had received bromid of potassium in 2 gr. doses every three hours. The eruption was somewhat similar to varicella, but there was no irritation or itching, and the general condition of the child was excellent. The height of the eruption was not reached until ten days after the drug was discontinued. New lesions continued to appear for three weeks. The tongue was involved. She finds nine cases very similar to this reported in the literature, but all the authors considered them of rare occurrence.

St. Paul Medical Journal.

April.

52 *Objections to Our Present Vaccine Virus and the Necessity for an Improved Method of Vaccination. Burnside Foster.
53 *The Relation of Water to the Public Health. Marshall O. Leighton.
54 Sewage Disposal. J. J. Flather.
55 Medical and Sanitary Inspection of the Public Schools. R. O. Beard.
56 Sanitation in Public Conveyances. H. M. Bracken.
57 The Trained Nurse. Arthur W. Dunning.

52. **Vaccine Virus.**—Foster pleads for a standardized government-regulated manufacture of vaccine virus. When this is brought about the accidents and failures of vaccination will be reduced to a minimum and the prejudices against vaccination will be removed.

53. **Water and Public Health.**—Leighton is the chief of the Division of Hydro-Economics of the United States Geographical Survey, and he gives his opinions as to the relation of water to the public health. Polluted water has little or no relation to the public health, unless it is used for domestic purposes. Water once polluted is unsafe for domestic use, unless artificially purified. The self-purifying power of streams is not constant, and, with the means at hand, can not be determined with exactness. In general, the water of a running stream is not suitable for drinking purposes in its raw state, as in all streams where the flow is sufficient throughout the year to supply any quantity of water directly the drainage area is so large that efficient police regulation would be impracticable. The best water supply is that derived from storage reservoirs or lakes, the drainage areas of which have been cleared of all possible sources of sewage pollution. Even in case of pollution the storage which the water receives is a helpful, though not effectual, safeguard. How the idea that running water purifies itself originated, he says, no one is able to say.

The Laryngoscope, St. Louis.

April.

58 *Autoclasis of the Tonsils an Auxillary Process of their Retrogression. Jonathan Wright.
59 A Case of Nasal Aprosexia: Associated with Stammering and Empyema of the Maxillary Antra. G. Hudson Makuen.
60 Fibroma of the Naso-pharynx, Tracheotomy, External Carotid Ligation, Extirpation. Chevalier Jackson.

61 *An Easy Method of Entering the Sphenoidal Sinus for Diagnostic Purposes. C. G. Coakley.
62 The Relation of Disease of the Upper Air Passages to Diseases of Stomach. Lewis A. Coffin.
63 *Acute Edema of the Larynx Complicating Articular Rheumatism. Thomas J. Gallaher.

58. **Autoclasis of the Tonsils.**—Wright explains atrophy of the tonsils in adults as a sort of production of a papillomatous condition and separation of the outgrowths. The patient practically swallows his tonsils.

61. **Sphenoidal Sinus.**—Coakley examined this sinus in all cases where muco-pus was found in the nose on anterior rhinoscopy, in all cases where a diagnosis of suppuration of any accessory sinus was determined, also in all cases where muco-pus was found in the choana on posterior rhinoscopy; in all cases giving a history of post-nasal catarrh, occipital pain, or where polypi are seen in posterior rhinoscopy; in all cases of atrophic rhinitis. The method he employs is impracticable where there are multiple polypi in the nose until they are removed and the surface been allowed to heal. The anterior nares are sprayed with a 2 per cent. cocain solution in 1 to 10,000 adrenalin chlorid. At the end of five minutes a second spraying of the nose with the same solution still further contracts the soft tissues in the posterior parts of the nasal cavities. An applicator wound with cotton is then dipped in 10 per cent. cocain solution and passed between the middle turbinate and the septum, to the posterior limits of the nares. The nose is next irrigated with sterile normal saline solution to remove as much of the secretion as possible. Inspection of the nares both anteriorly and posteriorly is made for determining any remaining secretion. Any that is visible is removed by dry cotton swabs. The region between the middle turbinate and the septum is rapidly cleaned with a cotton-wound applicator until all the secretion and moisture have been removed. A thin, not too flexible applicator, curved slightly upward for about three-quarters of an inch is rather tightly wound with cotton, the end being protected with cotton. This is passed between the middle turbinate and the septum, the uncurved part, one eighth of an inch above and parallel to the lower border of the middle turbinate until it reaches the anterior surface of the sphenoid. Then he tests the whole anterior surface by withdrawing and pushing forward the applicator until it is found that the instrument suddenly passes through an opening into a cavity of a depth of half an inch or more, giving a sensation much like that of a sound passing a constriction. To be sure that we are in the sinus the following tests will suffice: keeping the patient's head in the normal position, the instrument will remain in place. Posterior rhinoscopy does not show it in the nasopharynx. Usually a little of the steel shaft of the instrument can be seen in the upper part of the choana. Vertical and lateral motions of the applicator are practically impossible owing to the narrow orifice. A limited amount of rotation may be obtained, varying with the size of the sinus. The diagnosis of diseased sinus is made when one or more of the following conditions are observed:

1. On withdrawing the applicator and rubbing the cotton on a slide a microscopic examination shows the presence of pus. If the nares have been thoroughly cleaned as above described, this is conclusive. The slide made from the cotton from a normal sinus frequently shows but little mucus and an occasional epithelial cell and blood cell. 2. If muco-pus is seen at the upper part of the choana while the applicator is in situ (when previously there was none) this must have been forced from the cavity by the entering instrument. Of course one must not confound the cotton on the instrument with secretion from the sinus. That is the case when the applicator is wound too long with cotton, or the sinus happens to be shallow. 3. The feeling at the end of the instrument as if the cavity has a velvety, soft or pulpy lining. This sensation may be given if the cotton project too far beyond the end of the applicator.

He does not advocate operative measures for the cure of disease unless the region to be operated on is plainly visible to the eye.

63. **Rheumatism of the Larynx.**—The title of Gallaher's paper explains the condition found. He concludes from his observation of this case and other evidence that the larynx is subject to rheumatic inflammation more often than is commonly supposed, and acute edema may follow. Intubation may be relied on to relieve the condition of imminent suffocation. If resorted to, the operator should be close at hand to quickly reintroduce the tube in case of necessity. Tracheotomy should be performed when difficulty is experienced in retaining the tube in the larynx or when the operator is not within easy reach. Local applications are not very effective.

Transactions of the Chicago Pathological Society.

February 8.

64 Placentation in a Uterus Duplex Bicornus Gravis Menses 12. Maximilian Herzog.
65 *A Study of the Bactericidal Action of Human and Rabbit's Serum on Typhoid Bacilli. Gustav F. Ruediger.
66 On the Nature of Hemolysin Found in Filtered Typhoid Cultures. Norman E. Williamson.
67 Double Congenital Stenosis of Alimentary Canal. C. H. Neilson.
67½ Further Studies in Pneumonia. Edward C. Rosenow.

65. **Bactericidal Action of Serum on Typhoid Bacilli.**—The conclusions of Ruediger's article are:

1. When a small quantity of normal human or rabbit's serum is added to heated serum there is no true reactivation of the heated serum. The bacteriolysis obtained with this mixture is due to the normal serum added, irrespective of the amboceptors in the heated serum. 2. The addition of amboceptors to normal human or rabbit's serum interferes with bacteriolysis, and this interference seems to be due to a deviation of complement by the excessive amboceptors. 3. The addition of heated serum to a mixture of salt solution and normal serum may affect the bacteriolysis obtained with that mixture, because the heated serum is a good nutritive medium. 4. The best method of determining the bacteriolytic complement of a serum seems to be the following: Add small, accurately measured and gradually diminished quantities of the serum to be tested to small test tubes containing 1 c.c. of salt solution. Inoculate each tube with the same quantity of a twenty-four hour typhoid culture, and make plates at intervals and compare the results thus obtained with those obtained when normal serum was used.

Journal of the Michigan State Medical Society, Detroit.

May.

68 *Some Investigations on Hay Fever. Otto Scherer.
69 Our Relation in Accident Cases. T. F. Heavenrich.
70 *Congenital Elephantiasis. Report of a Case. H. R. Varney.
71 Tuberculosis. W. C. Huntington.
72 Smallpox and Vaccination. C. H. Baker.

68. **Hay Fever.**—Scherer calls attention to the differences of spring hay fever, due to the pollen of grasses and the fall hay fever of this country, which is not observed in Europe to any extent. He has examined all the pollen which was ripe at the time the fall hay fever begins, and finds that the ragweed pollen is the only one that has all the characteristics of any hypothetic exciting cause, and this agrees with what had been before suspected. It is a very light, odorless, tasteless, non-sticky powder, and is probably carried long distances by the wind. He has been able to isolate from it a white amorphous substance which has the toxic effect of hay fever. It is soluble in salt solution and glycerin, but not in alcohol or ether. It can be filtered through a Berkefeld filter, and will not dialyze through animal membrane. It loses its toxic properties at 80 C. He has named it ambrosin. The residue left when the ambrosin has been extracted is perfectly inert. He made a number of experiments on persons subject to hay fever at a time when they were not suffering from it, and in each case produced symptoms of the disease, which passed off in a short period. In one case he made applications of the solution to the eyes of several students, not knowing that there was a hay fever patient among them, and supposing them all immune. One immediately complained, and, on being questioned, proved to be a hay fever sufferer. He proved by forcing air through a considerable quantity of the substance and allowing the patient to breathe the air that there was no volatile constituent. The goldenrod pollen, he finds, is practically innocuous. The pollen theory is correct, but not when it explains hay fever, being due to mechanical irritation of various pollens on the mucous membrane of the air passages. The mechanical irritation is no different in the hay fever sufferer than in the immune. We can not attribute it to a local chemical action on the mucosa. Besides the ragweed pollen, we have in the hay fever patient a systemic, not a localized, condition, that allows the so-called toxin to act as such. It has two effects on the hay fever patient; first, a local irritating property and the other its action on some part of the central nervous system, irritating the centers and producing a condition of hyperesthesia. He admits there may be cases that are not due to this factor, but thinks that the majority of fall hay fever cases can be attributed to the ragweed pollen.

70. **Congenital Elephantiasis.**—After reporting a case Varney concludes that this condition is rare. It differs in origin and

general symptoms, has no recurrent inflammatory condition, yet it is progressive. A history of injury *in utero* in this case might have been a causal factor, but as a rule the causes are obscure and prognosis as to treatment should be guarded. The ray treatment should be employed.

Medicine, Detroit.
May.

73 *Early Diagnosis and Treatment of Pulmonary Tuberculosis. Charles A. E. Codman.
74 *Municipalities in the Crusade Against Tuberculosis. Lawrence F. Flick.
75 *Chronic Brass Poisoning—Brass-workers' Ague. Harold N. Moyer and J. M. Lavin.
76 *Nervous Complications of Influenza. Charles L. Mix.
77 A Case of Status Lymphaticus. J. H. Musser and J. T. Ullom.
78 Intermittent Cervical Hernia of the Lung of Spontaneous Origin. Clifford B. Farr.
79 Louis Pasteur. Augustus A. Eshner.

73. **Tuberculosis.**—The early signs of tuberculosis, as pointed out by Codman, are slight cough, a little mucous expectoration, occasional night sweats, a feeling of general weakness, some shortness of breath after slight exertion and perhaps in addition digestive disturbances, loss of appetite, bowel irregularity and slow but progressive loss of flesh and strength. There is some slight emaciation and there may be a few scars in the neck. Respiratory movements may be slightly restricted on the one side, but this is not usually noticeable in early cases. Percussion and palpation are not always positive, though there may be a little impairment of resonance and a distinct difference in notes on either side of the chest. On auscultation the breath sounds a little harsher, occasionally jerky-cogwheel inspiration and sometimes a few fine cracking râles are heard. The heart is in a mild state of excitability, independent of any organic lesion. The pulse is rapid and there is a daily variation in the temperature of 1 or 2 degrees—an afternoon elevation of 99.4 to 100. The patient should be impressed with a general idea of his condition. He must live in the open air, seek outdoor employment, take very moderate exercise and graduated respiratory exercises to increase the respiratory capacity; rest is necessary in fever cases, bathing in tepid or cool water should be prescribed and warning given as to use of tobacco and abstinence from alcohol. Liquors in any form are forbidden. Nourishing food is of advantage, and we should choose what agrees with the patient and does not burden the system with too much superfluous material. The most nutritious foods and those likely to cost the least, and within the reach of all are skim milk, whole milk, buttermilk and eggs. It is always well to have combinations. Where the patient cannot take undiluted milk, combination with Vichy, seltzer and lime water may be tried. Eggs should be eaten raw added to a glass of milk. The patient can continue his normal diet of beef, bread, potatoes and other vegetables in combination with a special milk diet. In the majority of cases, Codman says, the treatment as outlined will prove successful.

74. **Tuberculosis.**—Flick points out the tendencies in cities favoring the spread of consumption and the necessity of adequate municipal regulations to prevent its spread. He believes in compulsory registration and notification by the householder as well as the physician, as the consumptive poor change their residence very often. Education and control by municipalities must be assured, and hospitals for the poor incurables and dispensaries for the curable cases are also specified as important in the cities.

75. **Chronic Brass Poisoning.**—Moyer and Lavin report a case of brass worker's chills and discuss the subject generally as presented in the literature.

76. **Nervous Complications of Influenza.**—Mix finds that nervous complications can be classified according as they occur in the prodromal period, in the height of the disease and in convalescence, in postgrippal and metagrippal periods. As a rule, the early and late effects are toxic, while those occurring during the disorder are either toxic or inflammatory. The nervous complications of the prodromal period are headache, backache, neuralgia and delirium, all disappearing with the fever. Headache is the most common, usually frontal. It may be excessive or the patient may be almost stuporous. Backache and lumbar pain are doubtless neuralgic, though neuralgia in influenza usually belongs to the postgrippal period. Delirium and mental derangements or psychoses are not infrequent prodromal complications, possibly due to the effects of toxins on the frontal lobes. There is a particular type of influenza called the comatose form, very likely due to intense toxic effect on the cerebral cortex. The nervous complications of the fastigium and period of lysis are both toxic and bacteremic, or degenerative or inflammatory. Among the inflammatory complications are encephalitis, hemorrhagic and purulent, cerebrospinal meningitis and myelitis. The toxic complications are various psychoses and meningitic-like forms, to which the term meningism is applicable. Encephalitis is noticed at some length, with its general and focal symptoms, the question of diagnosis, etc. The latter may be difficult from hemorrhagic embolism or thrombosis but if the disease begins as an influenza and nervous symptoms develop later, it is not so difficult. The youth of the patient, the acute onset of chill and high temperature and the prevalence of an epidemic of influenza are to be considered. The meningitis here considered is simply the grippal form usually occurring suddenly, due to direct invasion of the brain or membrane. Its diagnosis is often very difficult. It may closely resemble epidemic cerebrospinal meningitis. Lumbar puncture is the only reliable method of differentiation. Coryza, diffuse bronchitis and bronchopneumonia indicate the grippal type. The history, chronic character of the trouble and general symptoms make tuberculous meningitis more readily differentiated. There is a form called by the French pseudo-meningitis, which has been reported, and the diagnosis between grippal meningitis and this is very difficult. Myelitis is another complication. It is acute and a symptom-complex closely resembling that of Landry's paralysis may appear. Certain parts of cord may be involved and a case of spastic spinal paralysis has been reported. The nervous complications occurring during convalescence are entirely toxic. Among these he includes neuralgia, myalgia, multiple neuritis, some cases of this being severe, focal neuritis, special involvement of the cranial nerves, cardiac neurosis from the vagus involvement and many cases affecting the spinal nerve with atrophy and paralysis most generally of the upper extremities. Of the paragrippal or metagrippal diseases, some may follow quickly after the disease, as epilepsy. Neurasthenia is the foremost of this group. The dominant feature of the neurasthenia is hypochondria and motor weakness. Hysteria is another frequent result and a number of other affections, including tetany and chorea, are mentioned. He concludes his article with a consideration of the psychoses of epilepsy. No other epidemic is so frequently followed by both acute and chronic psychoses. These are apparently not so much exhaustion psychoses, but belong rather to the toxic group, due to the specific neurotoxin of influenza. The onset may occur in the prodromal stage or during the febrile stage, or later, as in those coming on during convalescence. In these last cases the toxins have probably been eliminated, but the explanation may be found in the after-effects of the toxins on the cortical nutrition, continuing into convalescence and favored by general prostration. These are psychoses of exhaustion, but their prognosis is generally good. The pure postgrippal and metagrippal psychoses are fortunately rare; usually of the exalted type, sometimes strongly suggesting paranoia; also cases of general paresis may be lighted up by influenza. In these cases the prognosis is bad. In the febrile cases recovery occurs with a fall of the temperature and the prodromal attacks are usually transitory.

Journal of Medical Research, Boston.
February.

80 *The Pathological Anatomy and Histology of Variola. W. T. Councilman, G. B. Magrath and W. R. Brinckeroff.
81 *The Life History of Cytoryctes Variolæ, Guarnieri. Gary N. Calkins.
82 *Occurrence of Cytoryctes Variolæ, Guarnieri, in the Skin of the Monkey Inoculated with Variola Virus. G. B. Magrath and W. R. Brinckerhoff.
83 *Etiology and Pathology of Vaccinia. E. E. Tyzzer.
84 *Experimental Variola in the Monkey. G. B. Magrath and W. R. Brinckerhoff.
85 *The Leucocyte Reaction in Variola. G. B. Magrath, W. R. Brinckerhoff and I. R. Bancroft.

86 *The Infectiousness of the Blood in Variola. G. B. Magrath and W. R. Brinckerhoff.
87 *Infectiousness of the Late Stage of the Skin Lesion in Variola. W. R. Brinckerhoff.
88 *The Central Nervous System in Variola. E. E. Southard.
89 *Clinical and Experimental Study of the Bacteriolytic Complement of the Blood Serum in Variola. Ralph L. Thompson.
90 *Clinical Observations on Variola. I. R. Bancroft.
91 *Epicrisis. W. T. Councilman.

80-91.—This issue is exclusively a smallpox number and contains a series of monographic articles, some of them incapable of being briefly abstracted, owing to their details. This is the case with the first, by Councilman, Magrath and Brinckerhoff, on the pathologic anatomy and histology of variola. The second paper on the life history of *Cytoryctes variolae* has already been noticed editorially in THE JOURNAL, May 7, p. 1220. Tyzzer says he is fully convinced that the vaccine body is an organism and that it represents the etiologic agent of the disease. Evidence is given for this view. In conclusion Dr. Councilman sums up the general results and maintains the parasitic nature of the cause, the practical identity in vaccinia and variola, and points out the lacunæ that still exists in our knowledge of the organism. The number as a whole comprises one of the most complete and important contributions to the subject that has appeared.

Northwestern Lancet, Minneapolis.

May 1.

92 Case of Ulcerative Angina, with the Fusiform Bacillus and Spirillum of Vincent in the Exudate. S. Marx White.
93 The Submerged Tonsil and Its Operative Treatment. William R. Murray.

Medical Fortnightly, St. Louis.

April 25.

94 Case of Valvular Disease of the Heart: Its Prognosis. N. S. Davis, Jr.
95 The Glands of Bartholin. Charles C. Miller.
96 Presentation of Specimens. Francis Reder.
97 Influenza. Allen M. King.

Medical Age, Detroit.

April 25.

98 Use and Abuse of Pessaries. A. M. Leonard.
99 Rupture of the Membrana Tympani. Samuel G. Dabney.
100 Symptoms and Physical Signs of Pneumonia. J. A. Witherspoon.

Dominion Medical Monthly, Toronto.

April.

101 Abdominal Pain. J. H. Musser.
102 Bread. Geo. C. Nasmith.
103 The Literature of Tuberculosis at the Tuberculosis Exposition in Baltimore. J. H. Elliott.

Medical Mirror, St. Louis.

April.

104 Proper Treatment of Inevitable Abortion in View of Its Relation to Uterine Diseases. George G. Ward, Jr.
105 Nerve-strain and Modern Life. N. Newnhan-Davis.
106 Syphiloma, Pathology and Treatment, with Report of Clinical Case. William E. Fitch.

St. Louis Courier of Medicine.

April.

107 Permanent Mechanical Hindrances to Respiration. J. H. Tyndale.
108 Retrouterine Hematocele. W. C. Gayler.

Kansas City Medical Record.

April.

109 Climatic Treatment of Pulmonary Tuberculosis. B. F. Stevens.
110 Cases in Practice. E. F. Miller.
111 Psychology in Medicine. E. E. Gilmore.

Medical Sentinel, Portland, Ore.

April.

112 Treatment of Scarlet Fever. R. J. Skaife.
113 Practical Therapeutics in Eye Diseases. (Concluded.) Jno. A. Donovan.
114 The Secret of Longevity. B. F. Hart.
115 Physiologic Force. I. L. Magee.

Medical Standard, Chicago.

April.

116 Autointoxication and Its Treatment. Heinrich Stern.
117 The Nature and Importance of the Urinary Changes in Nephritis. Arthur R. Elliott.
118 Syphilis Hereditaria Tarda—a Pediatric Clinic. Isaac A. Abt.
119 Differential Diagnosis of Some Thoracic Difficulties of Childhood. S. V. Balderston.
120 Treatment of Bronchitis, Bronchopneumonia and Pneumonia. James Warren Van Derslice.

Woman's Medical Journal, Toledo, Ohio.

March.

121 Report of Cases Occurring in a Maternity Practice—Retained Fetus, Unusual—Dystocia Due to Youth of Mother—Twins, Births of Different Sex, Both Breech Presenation—Neuritis in Twin Pregnancy. Evaline Peo.
122 Acute Contagious Pemphigus in the Newborn—Report of Two Cases, with a Third Case in One Mother. Marie S. Schmidt.
123 Biographic Studies of Unusual Character. Mary E. Bates.

Medical and Surgical Monitor, Indianapolis.

April 15.

124 Digitalis. Wm. F. Waugh.
125 Scarlet Fever. John M. Batten.

Texas Medical News, Austin.

April.

126 Technic of Ether Administration Using the Open Method. B. F. Stevens.
127 Ureteral Calculus. A Case, Operation and Results. G. W. McCaleb.
128 Remarks on Ureteral Anomalies. Byron Robinson.

Louisville Monthly Journal of Medicine and Surgery.

May.

129 United Fractures and Their Treatment. James B. Bullitt.
130 Case or Two in Abdominal Surgery. Ap Morgan Vance.
131 Some Advice to Give, and Some Not to Give, the Tuberculous. Arch Dixon, Jr.
132 Pneumonia. Jacob Glahn.
133 Herniotomy Under Local Anesthesia. Ellis Duncan.

Clinical Review, Chicago.

May.

134 Myofibroma of the Uterus. Charles W. Oviatt.
135 Hysteria. (Concluded.) L. Harrison Mettler.
136 La Grippe. N. Filatov.

Canadian Journal of Medicine and Surgery, Toronto.

May.

137 Public Health in Its Ethical Relations. P. H. Bryce.
138 The General Course of the Ureter. Byron Robinson.
139 Management of Valvular Disease of the Heart. R. D. Moore.
140 Case of Fracture of the Patella Treated by the Open Method. Herbert Smith.

Toledo Medical and Surgical Reporter.

May.

141 Acroparesthesia. Louis Miller.
142 Static Ozone Inhaler in the Treatment of Diseases of the Lungs. E. J. Greenfield.
143 Empyema of the Accessory Sinuses of the Nose. James J. LaSalle.

Mississippi State Medical Association, Vicksburg.

May.

144 Address, Mississippi State Medical Association. C. D. Mitchell.
145 Truth and Falsehood in Medicine. W. D. McCalip.
146 Consideration of Scarlet Fever. H. A. Gant.
147 Sordes: Its Cause and Prevention. J. A. Tabor.
148 Capillary Bronchitis. E. Forrest Hayden.
149 Prophylaxis of Enteric Fever. H. M. Folkes.

Southern Practitioner, Nashville, Tenn.

May.

150 The Science of Medicine—the Science of Humanity. I. A. McSwain.

Providence Medical Journal.

May.

151 Education of the Feeble Minded. William F. Gleason.
152 Toxemia of Pregnancy, with Report of a Case. H. G. Partridge.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

April 30.

1 *Trauma in Relation to Disease of the Nervous System. Judson S. Bury.
2 Examination of the Tissues of the Case of Sleeping Sickness in a European. George C. Low and F. Walter Mott.
3 *Asylum Dysentery in Relation to B. Dysenteriæ. J. W. H. Eyre.
4 *Differentiation of B. Typhosis and B. Coli Communis by Means of the Photographic Plate. Walter C. Stevenson.
5 Note on the Causation of Cancer. H. J. Campbell.
6 Structural Links in Malignant Growths. Frank Bushnell and F. Cavers.
7 Treatment of Inebriety by Atropin. C. A. McBride.
8 The So-called "Gold Cure" of Inebriety. S. Backwell Fenn.
9 Adrenalin in Neurotic Habit. A. S. Myrtle.
10 Dionine: A New Ocular Analgesic. James Hinshelwood.
11 Hydronephrosis Due to Abnormalities in the Ureters. B. G. A. Moynihan.
12 Decapsulation of the Kidney for the Treatment of Albuminuria. David Newman.
13 A Fatal Case of Secondary Parotitis. Brennan Dyball.

1. Trauma and Nervous Diseases.—Bury's address takes up the subject of concussion of the brain, which he interprets in the sense of a violent shaking or agitation. He recognizes a number of evil consequences, such as meningeal hemorrhage, traumatic neurasthenia, insanity, cerebral tumors and late

apoplexy. Illustrations of the first two named are given. As regards traumatic neurasthenia he is inclined to think that one thing stands out clearly, the permanent physical and mental incapacity that so often follows concussion of the brain, even after what appears to be an apparently slight injury. He lays particular stress on the minor degrees of mental disturbance, which are easily overlooked and which seriously interfere with the wage-earning capacity of the individual. The possibility of simulation and exaggeration of the symptoms is mentioned. Concussion of the spinal cord is also noted. It may appear immediately or after a few days or weeks, and a number of instances are given. The conclusion he reaches is that though concussion may initiate the development of characteristic signs of tabes it rarely acts as the sole cause of the disease. There are generally symptoms pre-existing which a close observation or study of the literature will reveal. Undoubtedly trauma co-operates with other causes in the production of tabetic disease. The question whether disease of the spinal cord may result from injury to the peripheral nerves is also discussed. He here alludes to arthritic muscular atrophy, a well-known condition. There can be no doubt that morbid impulses from irritated nerves may injure the nutrition of the motor neurons and the occasional muscular atrophy and paralysis become permanent. In conclusion he calls attention to the need for further study of the after-effects of trauma especially as regards their prognosis. There has been much written and said about traumatic hysteria and neurasthenia, but there is room, he thinks, for more recognition of the prolonged and sometimes permanent incapacity for work that may result from concussion of the brain and cord. He believes that the simple prescription of a longer rest in bed after injury would do much to reduce the number of sufferers from chronic nervous disease.

3. **Asylum Dysentery.**—Eyre has studied the occurrence of dysentery epidemics in one of the London county asylums and concludes:

1. That a bacillus, identical with the *B. dysenteriæ*, described by Shiga as the specific cause of acute dysentery in Japan, can be isolated from the stools of many cases of asylum dysentery. 2. That the blood serum of some of these cases of asylum dysentery possesses a specific agglutinative action when tested against *B. dysenteriæ* isolated from the stools of other similar cases, and also against other strains of *B. dysenteriæ* isolated from cases of dysentery in tropical countries. On the other hand, the experience of an extended series of examinations of the stools of patients suffering from asylum dysentery will permit me to state: 3. That in order to detect the presence of *B. dysenteriæ*, the stools must be examined when fresh. 4. That postmortem material must be collected and examined as soon after death as possible, as after a few hours' delay, even in quite acute cases, *B. coli* becomes the predominant organism in the intestinal canal. 5. That under these conditions (3 and 4) the isolation of *B. dysenteriæ* from the stools of patients suffering from acute asylum dysentery is comparatively easy by the methods I have indicated [cultures on a modified form of lakmus-lactose-nutrose agar, of Drigalski and Conradi.—ED.]—when those stools are, naked eye, typically dysenteric. 6. That in cases of chronic asylum dysentery *B dysenteriæ*, if present, is so outnumbered by *B. coli* and other intestinal saprophytes as to render its isolation a matter of extreme difficulty.

4. **Differentiation of the Typhoid and Colon Bacillus.**—According to Stevenson the exposure of a culture on a photographic plate for a short time in a dark room or under red light, when developing a plate, will reveal very marked reduction of silver in cases of the colon bacillus cultures, but very little or nothing with the typhoid germs. The activity of each of these increases with time up to a certain age, say from shortly after inoculation to at least four days of the growth. A colon culture of twenty-four hour age compared with a typhoid culture of any age gives the most marked reducing effect. He has found this discrimination recognizable with four cultures of the colon bacillus from different sources and with five typhoid cultures from different sources. The time of exposure of the plate to the application of the culture has varied between 10 and 90 minutes.

The Lancet, London.

April 30.

14 *Recent Studies on the Tissue-lymph Circulation. Geo. Oliver.
15 Medical Ethics. D. Lloyd Roberts.
16 *Eyestrain as a Cause of Headache and Other Neuroses. Simeon Snell.
17 *The Treatment of Muco-membranous Colitis. Dr. De Langenhagen.
18 *Removal of the Gall Bladder in Operations for Gallstones. B. G. A. Moynihan.
19 *Note on the Causes of Cough in Children. Arthur W. Fuller.
20 Case of Attempted Division of the Eighth Nerve Within the Skull for the Relief of Tinnitus. Cuthbert S. Wallace and H. J. Marriage.
21 A New Method of Demonstrating the Laryngeal Image and Intralaryngeal Operations. Eugene S. Yonge.

14. **Tissue-Lymph Circulation.**—The extravascular circulation of the body has been studied by Oliver, who points out the effect of the ingestion of food on the tissue-lymph glands. He shows the digestive variations of the blood pressure as revealed by experimental studies, the digestive variations of the blood and in the exudation of tissue lymph. The blood variations clearly show that they indicate striking concurrent events. All four series followed the same curve. He asks what is the link that binds them together. If we suppose that the ingestion of food in some way raises the capillary blood pressure which exudates a filtrate of a portion of the liquor sanguinis into the areolar spaces, all the changes in the blood which he has described will naturally follow. According to the exudation under a rising capillary blood pressure the blood will become more and more concentrated in chromocytes and hemoglobin, and its specific gravity mainly dependent on the corpuscles, its density will rise with increased concentration. Then when the capillary pressure begins to fall, as it does after acme of the digestive disturbance has been attained, the concentration of the blood diminishes, and we may assume that either absorption of the watery elements or the effused lymph overbalances exudation and that the effusion is being returned by the lymphatics to the blood. He has studied the effect of lymphatic pressure aggravated by various kinds of food and of various chemical substances, such as inorganic salts, chlorids and carbonates of sodium, potassium and ammonium, muscle extractives and the active principles contained in beverages. He finds that the purin bodies and alcoholic beverages act as pressor agents. He concludes that the food constituents themselves, proteids, fats and carbohydrates do not possess the power of starting the mechanism by which lymph is dispensed to the tissues, but that nature, however, associates with our foodstuffs small quantities of certain very active substances that do stimulate that mechanism; though they are practically devoid of food value. This natural lymph stimulation is still further increased by the use of salt and beverages containing bodies which act simultaneously to them. These facts, he thinks, demonstrate that such bodies as uric acid, creatin, creatinin, xanthin, glycogen and sodium chlorid perform an important function in nutrition, acting as distributors of lymph to the tissues during digestion. It may be that we will find other substances associated with our food elements possessing this physiologic property. Nature has wisely distributed these active chemicals through most of our foodstuffs and beverages, but man in his efforts to improve on nature often turns these benefactors into malefactors. Besides these lymph factors introduced from without there are supplies of the same material generated within us. It is not improbable that in some subjects the endogenous production of lymph factors may exceed the physiologic average when an adjustment can only be effected by limitation of the exogenous supply.

16. **Eyestrain and Headache.**—Snell takes up this subject, which has been so much discussed by Gould, referring to his recent works. He summarizes his paper under the following conclusions:

1. That eyestrain is the cause of a large proportion of headaches, often of a very aggravated character. 2. That various other neuroses are met with in association with headache, and among these may be mentioned the following: mental depression, nausea, indigestion, vomiting, insomnia, giddiness, choreiform movements of the eyelids and face, etc. 3. That relief is afforded to these conditions by correcting the error of refraction, which can be ascertained only after careful examination. 4. That for such examination a mydriatic is absolutely essential. 5. That frequently no complaint is made of defect of vision. 6. That the ametropia is frequently of low degree, 61.2 per cent. of my cases needing 0.75 D. cyl. and weaker. 7. That a cylinder of 0.25 D. is of great value. 8. That anisometropia is frequently present and requires proper adjustment. 9. That in a certain number of cases the muscle balance is faulty and necessitates the prescribing of prisms.

17. **Muco-Membranous Colitis.**—This condition, from a symptomatic point of view is generally characterized by marked intestinal atony, and more or less abundant secretion of mucoid or membranous matter. The third fundamental element of the disease is pain. The treatment as laid down by De Langenhagen consists, first, in alimentary régime. The food should be

chosen as to the nourishment of the patient in such a way that the excrement shall neither be abundant nor irritating. He goes into considerable detail on this subject. What he specially warns against are green vegetables and raw fruits. Very little bread should be taken and that should be stale or toasted. All alcoholic drinks should be avoided. When milk agrees it is generally digested and rarely has to be excluded. All fatty material should be strictly forbidden. All pork, except very lean ham, no game, or crustaceans, hashes, stews, roasts, gravies, sauces and pastry of all kinds. In very severe cases the patient should take nothing but milk if tolerated, light cereal porridges, eggs, beef-tea and sometimes a very little finely minced raw meat. Bread should be strictly forbidden. The second element in the treatment is the washing out of the intestine, which is to be considered as an internal dressing of the mucous membrane. The fountain syringe should be used, the pressure light and the flow slow, so that about ten minutes for a quart injection is required. There should be some softening substance, such as linseed, marshmallow or some medicated substance to render the water less irritating. The temperature should vary from 35 to 48 C. A lower temperature is best where there is a tendency to spasm and resistance, and the higher ones where there is complete atony without spasm, and the physician desires to stimulate the muscular tissue and reawake it, if it is practicable. He would perform this irrigation, beginning with three-quarters of a quart and increase it up to 1½ quarts of the mixture. He prefers to have it in two consecutive procedures, the first to rid the bowel of its fecal contents and the second to carry away the mucus and act on the mucous membrane previously cleansed. The first irrigation should be expelled after one or two minutes, and the second after nine or ten minutes, if possible. But where the patient can secure a good stool before the irrigation he uses but one irrigation and in certain cases also he only performs it two or three times a week instead of once a day. He discusses the objections to it, but claims that they are invalid. The disadvantage of increasing intestinal atony is lessened by the fact that usually things can not be much worse than they are when the process is begun. It is in only about 20 per cent. of the cases that irrigations are useless or cause slight inconvenience, and this may be considered the maximum, according to his statistics. The third element in the treatment is hydromineral cure. He speaks of Plombieres and Chatelguyon springs in France, and describes the methods there used. He does not mention any suitable localities for this treatment in any other countries than France.

18. **Cholecystectomy.**—Moynihan pleads for this operation instead of cholecystotomy. He claims that it is no greater risk, and he is disposed to advocate the frequent, though not invariable, adoption of this operation. It removes the chief source of the disease, and thereby prevents recurrence, growths in the gall bladder or adhesions around it are subsequently impossible, and finally the wound, if drainage is not required, may be caused to heal throughout by first intention. The gall bladder is devoid of any strikingly useful function, and its removal does not make the patient any worse. He describes his method of removal.

19. **Cough in Children.**—Fuller speaks of spasmodic or periodical attacks of coughing and refers to the probability of their being due to adenoids. He thinks the child, if not too weak, should be encouraged to exercise, and a change of air should be recommended when practicable. It may be all that is needed in the majority of cases. Iron when anemia is present, local treatment of the pharynx by gargles, etc., sedatives to relieve extreme reflex irritability and the habit of coughing, and if the bronchi are much affected, the ordinary expectorants are indicated. Adenoids or markedly enlarged tonsils should be removed as soon as possible. Carious teeth should be removed, as they frequently infect the throat.

Indian Medical Gazette, Calcutta.

April.

22 Intestinal Parasites as Factors in the Mortality of Prisoners in Cannanore and Rajahmundry Jails. C. F. Fearnside.
23 Intestinal Animal Parasites in Bihar and Orissa. Clayton Lane.
24 Some Notes on Ankylostomiasis in Assam. Charles A. Bentley.
25 Note on the Occurrence of Intestinal Parasites in Ranchi, Chota Nagpur. R. H. Maddox.

Presse Médicale, Paris.

27 (I, No. 28.) *La mortalité et les maladies dans les milieux militaires. L. Bard.
28 Les epitaxis des hypertendus. A. Martinet.
29 *Abus de chlorure de sodium comme cause de néphrite. S. Tarindo. Abstract.
30 (No. 29.) Exostose sous-Unguéale du gros orteil (of great toe). M. Savariaud.
31 Nécessité de traitement preventif dans la syphilis. Leredde.
32 *De la dilatation élastique intermittente. L. Maurat. Abstract.
33 (No. 30.) Proposed Code of Ethics. E. De Lavarenne.—Un code de déontologie.
34 *Un nouvel anestésique local. La Stovaine. F. De Lapersonne.
35 *De l'origine syphilitique de l'appendicite. E. Gaucher.
36 *Nouveaux procédes de diagnostic par la tuberculine. L. Nattan-Larrier.
37 *La méthode graphique. Lannelongue. Abstract.
38 *Exploration de l'intestin grêle et différenciation pratique de ses anses. A. Bert and L. Laroyenne. Abstract.
39 (No. 31.) Report of French Congress of Gynecology. (Commenced in No. 30.
40 Les kystes traumatiques de la main (of hand). C. Dujarier and P. Lecène.
41 (No. 32.) Enquête sur la tuberculose faite auprès des médecins praticiens. E. De Lavarenne.
42 *Les sels de calcium et la gélatine considerés comme agents de coagulation du sang. Gley and Richaud.
43 *A propos de la décapsulation du rein (of kidney). T. Tuffier.
44 Associations de l'antipyrine. A. Martinet.

27. **Disease and Mortality in Military Circles.**—L. Bard is professor of clinical medicine at Geneva, and he does not hesitate to proclaim in the course of this article that the supreme command of an army should be entrusted to a physician when the enemies to be combated are not other men but fevers and epidemics, and the aim sought is to bring the troops to a certain point in the best possible condition for active service. The army physician's place is not in the rear with the lame and the halt; he should be in the very vanguard to select places for encampment, to watch over the sources of the drinking water, to direct the sanitary arrangements in general, matters which are left too often to some heedless second lieutenant.

29. **Abuse of Salt as Cause of Nephritis.**—Tarindo of Modena observed marked aggravation of the nephritis in 2 cases after treatment with saline solutions for a few days. He has also observed the cases of two children who had ingested an immoderate amount of salt, followed by nephritis, the diagnosis in one case confirmed by the postmortem findings. Stokvis, Levi, Castaigne and Rathery have induced lesions of degeneration and inflammation in animals by means of sodium chlorid.

32. **Elastic Intermittent Dilatation.**—Maurat invented three years ago an elastic dilator for treatment of strictures in the urethra or similar organ. A soft elastic sound without any opening at the tip is inserted and filled with water from a graduated syringe. The water is introduced and withdrawn several times in succession, thus accomplishing a soft intermittent dilatation entirely free from friction or pain. He uses a sound with a bulging portion to act on the prostate.

34. **New Local Anesthetic, Stovain.**—The new anesthetic is derived from the group of amino-alcohols, and is the hydrochlorate of amylein alpha beta. De Lapersonne has been testing it in ophthalmology and regards it as an important contribution to the group of local anesthetics. It is much less toxic than cocain. In instillations it does not induce as complete anesthesia, but it is superior to cocain in this respect for subconjunctival and subcutaneous injections. It has vasodilating properties, but this is no inconvenience, owing to its slight toxicity.

35. **Syphilitic Origin of Appendicitis.**—Gaucher states that he found acquired or inherited syphilis in 29 out of 32 cases of appendicitis. Gaucher is professor of dermatology and syphiliography at Paris.

36. **Thermo-Diagnosis with Tuberculin.**—Nattan-Larrier admits that the two new diagnostic applications of tuberculin have only theoretical value as yet, but from this point of view they are interesting. Marmorek calls the first the "tuberculin-réaction précoce"; the other is known as the "tuberculin-réac-

tion incorrecte." The ordinary reaction to tuberculin is due to the presence of the tubercle, but the "early" reaction is due to the presence of the bacilli. After a few hours they are destroyed by phagocytosis and the reaction can no longer be obtained by this means. The suspected fluid is injected into the guinea-pig and in half an hour 1/80 of a drop of pure tuberculin is injected directly into the brain. In one hour afterward the temperature has risen to a maximum far above that of the controls. Marmorek places the time limit at two to four hours, but Larrier shows that after the first hour the controls' temperature may continue to rise while that of the infected animals subsides. The "indirect" reaction is based on the phenomenon that the ordinary tuberculin test may be induced after inoculation with a tuberculous fluid, before the tuberculosis has really developed, the injection made about the sixth day after inoculation with the suspected fluid. The temperature reaction reached its maximum about the eighth hour in 4, about the tenth hour in 5, and after the twentieth hour in 2. It is thus necessary to take the temperature every three hours during the two days after inoculation. The difficulty of securing identical conditions at each repetition renders this mode of diagnosis impracticable.

37. **Graphic Method.**—Lannelongue applies this term to the systematic drawing on the skin of symmetrical parts the outline of the parts beneath, the recesses, projections, outlines and relations of organs as determined by palpation. Variations from the normal can thus be determined at a glance.

38. **Differentiation of Loops of Small Intestine.**—Bert points out that the valvulæ conniventes of the small intestine diminish in size and number from its commencement to its end. These valves can be palpated through the intestine smoothed between the fingers, and the distance of the part from the duodenum or the cecum can be determined by the size and number of the valve projections felt with the fingers. When pressure is dangerous, as in a distended intestine, the insertion of the valves may be seen through the intestinal wall—at least they can be so seen in the cadaver.

42. **Gelatin and Calcium Salts to Induce Coagulation of Blood.**—Gley and Richaud conclude from the research described that a small amount of calcium salts induces coagulation while a larger amount has the opposite effect. Also that any coagulating action observed after administration of gelatin is due to the proportion of calcium salts in it. Gelatin contains certain substances which actually retard or prevent the coagulation, and when it succeeds as a hemostatic it is due to the fact that it happens to contain the exact proportion of calcium salts needed by the individual. They denounce gelatin on the whole as unfitted for general hemostasis.

43. **Apropos of Decapsulation.**—Tuffier published in 1889 his experiments undertaken to study the possibility of transplanting the kidney. He performed decapsulation and then tied off the renal artery and vein and tried to supplant them by anastomoses on the surface of the organ. He recapitulates his researches here, applying the results observed to Bakes' modification of Edebohls' technic, with the significant statement that all his animals died and also all the animals in similar research undertaken later by Claude.

Semaine Médicale, Paris.

45 (XXIV, No. 16.) *La bactériurie typhoïdique et son rôle dans la diffusion de la dothiénentérie. F. Munch (Paris).

46 *Report of German Congress of Surgery. (Commenced in No. 15.) See pages 1175 and 1241.

45. **Typhoid Bacteriuria.**—Munch reviews a number of works on this subject, including several that have been published or summarized in THE JOURNAL, and insists on the prophylaxis. Besides disinfection of the urine as systematically as of the feces, he advises disinfection of bath tubs used by persons who have or have had typhoid recently. Micturition during the bath is of frequent occurrence in typhoid fever. In local treatment of the bacteriuria injections of potassium permanganate into the bladder have resulted in the immediate cure of typhoid bacteriuria in a number of cases on record. He emphasizes especially the enormous number of bacteria liable to be found in the urine and the fact that it does not leave noticeable stains. Urine is evacuated much more frequently and copiously than the bowel dejecta, and is much more intensely infectious and for a much longer period. Ignored contamination from typhoid urine explains many puzzling infections and the contamination of many water supplies. The bacteriuria does not appear to have any influence on the course of the typhoid fever in most cases, although instances have been published in which cystitis persisted after recovery; in Houston's case it developed after three years.

46*a*. **Surgical Treatment of Chronic Colitis.**—Beck has treated 500 cases of chronic colitis during the last seven years, all but 170 being women. The majority had previously been in the hands of charlatans after physicians had diagnosed a neuropathy. He is convinced that the nervous symptoms accompanying the different forms of colitis are purely secondary, the affection of the large intestine being the primary lesion. The etiology generally includes some inflammatory lesion in the abdomen, and in 257 cases he performed some operation addressed to inflammatory lesions outside, and in 19 cases in the large intestine. In 6 cases he performed exclusion of the colon by an ileo-sigmoidostomy with 5 cured to date in this latter group. One patient succumbed to peritonitis attributable to the use of the Murphy button. Surgical intervention was indicated likewise in 120 other cases, but was refused.

46*b*. **New Functional Test of Heart.**—Katzenstein remarks that compression of a large artery, such as the iliac, immediately raises the blood pressure. A normal heart is able to take care of this increased task imposed on it without acceleration of the pulse, but not so in morbid conditions. He tentatively applied compression to both iliac arteries, with simultaneous control of the arterial pressure and of the pulse rate. He found that four classes of responses were obtained: the arterial pressure rose 5 to 15 mm. of mercury while the pulse did not vary; in case of hypertrophy of the left ventricle the pressure increased by 15 to 40 mm.; in the third group the pressure did not vary but the pulse became more rapid, and in the fourth, the arterial pressure sank to a maximum of 30 mm. while the pulse increased in frequency. He thinks that these two latter classes indicate insufficiency of the heart, and advises this simple test as a means to determine the condition of the heart before serious operations.

46*c*. **Cocain in Oily Solutions.**—Klapp's experimental research has shown that cocain in an oily vehicle is absorbed more slowly than when water is used. He thinks that oily solutions are better adapted for spinal cocainization than the aqueous on this account.

Centralblatt f. Bakteriologie, Etc., Jena.

Last indexed page 1326.

47 (XXXV, No. 5.) Bacterium Found in Man Resembling that of Glanders. H. Selter.—Ueber ein rotzähnliches Bakterium beim menschen.

48 Zur Biologie des Influenza Bacillus. A. Ghon and W. v. Preyss (Vienna).

49 Ueber die feine Struktur des Milzbrand-Bacillus (anthrax). D. Ottolenghi (Siena).

50 Typhus Bacillen im Brunnenwasser (in spring water). D. Konradi (Kolozsvar).

51 Bacterial Findings in Inflammation of Udders of Cow and Goat. P. Steiger.—Bakterienbefunde bei der Euterentzündung der Kuh und der Ziege. (Concluded.)

52 Trypanosoma-Infektion beim Menschen. F. Marchand and J. C. G. Ledingham (Aberdeen).

53 Paramphistomiden der Säugetiere (of mammals). F. Fischoeder.

54 Invasion Through Skin in Ankylostomiasis. Reply to Pieri. A. Looss (Cairo).

55 Protective Inoculation Against Cholera. N. Murata (Kobe).

56 Hämolytische Wirkung des Loefflerschen Bacillus. J. Schwoner.

57 Das Hämolysin des Bacillus der Hühnercholera (hen cholera). D. Calamida (Turin).

58 Study of Immune Bodies. R. Sleeswijk.

59 Gibt es latente Präzipitine? F. Nagelschmidt.

60 Bactericidal Power of Bismuth. E. Koch. Ueber die bakterizide Wirkung des Wismuthsubnitrats und des Bismon (Kolloidalen Wismutoxyds).

61 Ueber die Desinfektion mit Karboformal-Glühblocks (formaldehyd bricks). A. Liedke.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

62 (XXX, No. 17.) *Unusual Course and Sudden Death in Typhoid. H. Curschmann (Leipsic).—Ungewöhnliche Verlaufsweisen und plötzliche Todesfälle beim Unterleibstyphus.

63 *Examination of Heart. F. A. Hoffmann.—Ueber Herzuntersuchung.
64 Results of Operations in Peritonitis Originating in Appendix. F. Trendelenburg.—Ueber die Operationsresultate bei der vom Wurmfortsatz ausgehenden Peritonitis in der Leipziger chirurgischen Klinik.
65 *Dangers of Intrauterine Injections. P. Zweifel.—Ueber die Gefahren intrauteriner Injektionen.
66 Otitis externa ulcerosa. A. Barth.
67 Zur Kenntnis der syphilitischen Veränderungen der Vagina und der Vaginal-Portion. J. H. Rille.
68 Origin of Congenital Sacral Tumors. H. Tillmanns.—Zur Entstehung der angeborenen Sakraltumoren mit bes. Berücksichtigung der Spina bifida cystica.
69 Zur Verhütung und Behandlung der pleuritischen und empyematischen Skoliose. T. Kölliker.
70 Zur Kasuistik der Krupp-Erkrankungen im Kindesalter (croup). R. Klein.
71 *Testing Underclothing for Use in Tropical Climate. R. Bassenge.—Ueber eine einfache Methode zur Prüfung der Zweckmässigkeit tropischer Unterkleidungen.
72 Das Abkommen der internationalen Sanitäts-Konferenz in Paris vom 3 Dezember, 1903. Gärtner.
73 The St. Louis Medical Exhibit. A. Wassermann.—Die med. Abtheilung der deutschen Unterrichtsausstellung in St. Louis. See news column, page 1230.
74 Behandlung der akuten Otitis media mit 10 pro-zentigem Karbol Glyzerin. A. Hartmann (Berlin).

62. **Unusual Course and Sudden Death in Typhoid.**—Curschmann describes a number of atypical cases of typhoid, among them that of a physician who had no temperature in the morning but after the strain of his office hours had a chill and temperature, which he diagnosed malaria until a severe exacerbation with diarrhea, roseola and enlargement of spleen cleared up the diagnosis. In another case a woman had been ordered to go to a watering place on a diagnosis of severe chlorosis, but applied to him first and he discovered an ambulant typhoid, as also in another similar case diagnosed as cardial neurasthenia. He confirms the experience of others that serious complications are more liable in the ambulant cases, and the sudden deaths in the first two or three days of typhoid are usually in cases that have had a long previous ambulant, unrecognized course. Fatal hemorrhage and perforation may occur in the mild and very mild cases as well as in the more severe forms. In one case the perforation occurring in an unrecognized ambulant typhoid was diagnosed as volvulus, in another as arsenic poisoning. Suddenly developing peritonitis should always suggest the possibility of an unrecognized ambulant typhoid. The fatal lesions may be found in the appendix region. In one case, diagnosed as influenza, death occurred suddenly in suffocation and the necropsy disclosed typhoid lesions in the intestines and an embolus in the left pulmonary artery. In another case the necropsy revealed the lesions of a three to four weeks' ambulant typhoid associated with a three months' abortion, suppurating metrophlebitis and fulminating sepsis. He has witnessed an ambulant typhoid terminate in a fulminating exacerbation, and has observed 6 cases of hemorrhagic typhoid, 3 of them in children, and the others in hard drinkers. In one the typhoid commenced hyperpyretic and became hemorrhagic toward the end.

63. **Examination of the Heart.**—Hoffmann expresses due appreciation of the Röntgen rays for the examination of the heart, but says that their chief use has been to brilliantly corroborate in every particular the findings of ordinary percussion. They have transformed the presumptive percussion findings into positive certainties by confirming and sustaining them in every particular. He always percusses with finger and plessimeter, and warns that the sternum should be percussed separately as liable to mislead by its own special resonance. He percusses the sternum from above downward, seeking to determine where its special sound ceases, especially whether there is dullness over the sternum below the fourth rib. When the sternum resonance vanishes at the line of junction of the sternum with the fifth costal cartilage, then the heart in normal position and with normal lung is not enlarged. If the sternum resonance vanishes at the line of junction with the fourth cartilage or between the fourth and fifth the heart may be enlarged, although the general build of the subject must be taken into consideration. The Röntgen rays have demonstrated the wide variations in the location and other conditions of the heart possible within normal limits. He thinks that the use of the phonendoscope is apt to be rather confusing owing to the sounds from the lungs. It is chiefly valuable for outlining the heart above and toward the left. He thinks that there is room for much progress in study of the shading of the heart sounds. After analyzing the conditions and their causes he formulates the rules that the first sound is particularly loud at the apex in, 1, exophthalmic goiter and nervous conditions generally; 2, in mitral stenosis; and, 3, that it is a sign of disturbed compensation in valvular affections, while it is of no value as a symptom of arteriosclerosis. When the first sound is particularly weak at the apex there is liable to be, 1, myocarditis, synechia or an effusion in the pericardium (in which case the second sound is weak likewise); 2, mitral insufficiency; 3, incipient disturbance in compensation of a valvular affection, or, 4, fatty heart. When the second sound is peculiarly loud at the apex it is loud also at the base, or the first sound may be weak, throwing the second into prominence, in case of fatty heart. A notably loud first sound at the base requires further careful study with postmortem comparison, unless it is simply the propagation of the loud first sound to the base. Notable weakness of the first sound at the base is connected with the weakness of the first sound at the apex. A notably loud second sound at the aorta indicates increased action of the left ventricle. This is especially noticeable in certain cases of stenosis of the aortic valve. A notably loud second sound at the pulmonary artery indicates increased action of the right ventricle. Arteriosclerosis may exist in this case, but is not indispensable. The loudness of the sound is not induced by the sclerotic wall of the artery, and neither is the peculiar ring of the second sound with its deep vibrations any sign of arteriosclerosis in itself alone. It should only arouse suspicion, as it indicates abnormal tension of the wall of the aorta. Notable weakness of the second sound at the aorta to complete disappearance is observed in case of insufficiency of the aortic valves and stenosis. The significance of this sign has not yet been fully determined. In an infectious disease, accompanied by weakness of the second pulmonary sound, it is of unfavorable prognosis, as it indicates extremely weak heart action, as, for instance, in diphtheric myocarditis. A very weak second sound at the pulmonary artery indicates inadequate compensation in mitral valvular defects. Notable weakness of the sounds at the base compared to those at the apex indicates the action of alcohol, while the reverse, faint sounds at the apex with loud sounds at the base, indicates fatty heart.

65. **Dangers of Intrauterine Injections.**—It seemed possible by avoiding entrance of air, infection and absorption of drugs to render intrauterine injections absolutely harmless, but Zweifel reports a case of convulsions simulating an eclamptic attack which occurred during an extremely cautious intrauterine injection of boiled water. Particularly remarkable features of the case were the coughing up of blood and hemoglobinuria and the rapid rise in temperature which less than two hours after the injection was 104 F. and by three and a half hours 106 F., subsiding to normal by the next morning. The injection had been made as a last resort to induce artificial delivery after failure of bougies and the metreurynter—the indications being heart disease with edema of legs and râles heard over the lower lobe of the left lung. The fetus was expelled the day after the injection, which had been made according to Künne's technic, and recovery proceeded normally. Zweifel explains the convulsions as the result of the dissolving of blood corpuscles by the water flowing into the uterus, entailing coagulation, then infarct in the lung and finally hemoglobinuria. The symptoms resembled those observed when water is injected into the blood. All the substances which dissolve blood corpuscles are liable, when injected into the blood, to induce coagulation, hemoglobinuria and general convulsions. He draws the inference that boiled physiologic salt solution should be used for intrauterine injections instead of plain water. The danger is much less after delivery, as the injected fluid is not taken up so readily by the blood vessels. Tests with stains have shown that fluids injected into the uterus are almost sure to pass through the tubes, which explains many of the mishaps after gynecologic injec-

tions. For this reason the amount of fluid used must not surpass one or two drops unless the cervix is well dilated and a stiff tube used. No intrauterine injections should be attempted when there is any inflammation in the uterus or vicinity, as even the most harmless substances and most approved technics are liable to prove fatally dangerous. Penciling is much safer.

71. To **Test Underclothing for Tropical Climate.**—Bassenge submitted the subject wearing the underclothing to electric light sweating baths. In comparative tables he noted the duration of the test (20 minutes), the temperature of the bath, the commencement of sweating on the covered and uncovered parts of the body, the weight, temperature and pulse of the subject before and after and the weight of the underclothing before and after, with record of the subjective sensations. In this way the advantages of a thin, loosely woven cotton tricot were unmistakably apparent.

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Last indexed page 807.

75 (XIX, No. 1.) Mode of Dissemination of Eclampsia Toxin in Mother and Fetus. Dienst (Breslau).—Verbreitungsweg des Eklampsiegiftes bei der Mutter und ihrer Leibesfrucht.
76 *Tetanie in der Gravidität. Voelker (Heidelberg). One case.
77 2 Fälle von Placenta prævia centralis. Stähler (Siegen).
78 Zur mikroskopischen Diagnose der Gravidität. Schallehn (Stettin).
79 Aetiologie und Therapie des Puerperal-Fiebers. Queisner.
80 Supravaginale Amputation des myomatösen Uterus wegen Gravidität. Unterberger (Königsberg).
81 *Pemphigus neonatorum sive contagiosus. Hengge (Greifswald).
82 Fall von Karzinom der Bartholinischen Drüse (glands). v. Frisch (Vienna).
83 *Zur Frage der abdominal-typhösen Suppuration des Ovarial-Cysten. Zantschenko (Kazan).
84 *Zur Uretern-Chirurgie. Lichtenauer (Stettin).
85 Modifizierte Alexander-Operation. Barth (Dantsic).
86 (No. 2.) Vesicular Mole in a Six-Months' Twin Ovum—the Other Ovum Sound. Birnbaum.—Blasenmole bei einem Zwillingsei und Lutein-Zellen-Verlagerung in einem Blasenmolen-Ovarium.
87 Zum Geburts-Mechanismus bei Hydrencephalocele sagittalis Kehrer (Heidelberg).
88 *Fall von Kastration wegen Molimina menstrualia nach Hysterektomie (castration on account of persisting molimina). Bluhm.
89 *Zur abdominellen Total-Exstirpation des karzinomatösen Uterus. Krönig (Jena).
90 *Should Fixation of Uterus Be Avoided in Child-Bearing Age? v. Guérard (Düsseldorf).—Sind Ventrifixur und Vaginifixur bei Frauen in gebärfähigem Alter zu verwerfen?
91 *Zur Alexander-Adamsschen Operation. Steidl (Strasburg).

76. **Tetany During Pregnancy.**—Voelker's patient was a woman of 39, a ix-para. The tetany recurred in the five last pregnancies and ceased with delivery.

81. **Contagious Pemphigus.**—Hengge reports a small epidemic of pemphigus at the Greifswald clinic, evidently originating from the fetid lochia of one parturient. Her infant became infected and then another woman and 3 children. The *Staphylococcus aureus* was found in the lesions. The treatment found most effective was to remove the fresh blisters and wash the spot with 50 per cent. alcohol and later with 1 per 1,000 sublimate.

83. **Typhoid Suppuration of Ovarian Cyst.**—Zantschenko describes the removal of a suppurating ovarian cyst eight months after typhoid fever. The findings confirmed that it was a case of pure infection of the pre-existing cyst with typhoid bacilli. Suppuration has not hitherto been observed in a cyst of this kind, a pseudo-mucous ovarian cystoma.

84. **Surgery of Ureter.**—Lichtenauer commends his technic which consists in slitting the ureter outside of the peritoneum, fastening both flaps to the inner wall of the bladder, and then suturing the outer layers of the bladder wall to the ureter. In case of intraperitoneal implantation greater security is afforded by suturing the bladder around the ureter, but there is no safety drainage. The extraperitoneal technic allows better drainage, but the suture is less reliable.

88. **Castration After Hysterectomy.**—Barth's case demonstrates that the ovaries are able to continue their functions undisturbed after removal of the uterus. It shows, however, that the recurring molimina are liable to cause pain from hyperemia of a tumor, and that the hyperemia in the parts has a favoring influence on the growth of the tumor and also on the development of metastases or recurrence. In case of malignant disease it is better to remove the ovaries with the tumor on this account.

89. **Abdominal Extirpation of Cancerous Uterus.**—Krönig has performed the radical operation 38 times in 53 cases of carcinoma of the uterus. In 23 he followed Wertheim's technic with certain modifications which he describes. The results, immediate and remote, have confirmed his hopes from this modification. They also encourage him to advocate operations on recurrences over and over again as necessary. In nearly every instance when the conditions were found inoperable at the laparotomy, he ligated the afferent vessels and removed the ovaries if they were still functioning. He thinks that this, combined with treatment through the vagina, will insure fine palliative results.

90. **Fixation of Uterus in Child-Bearing Age.**—Guérard's experience has been decidedly in favor of vaginifixation and ventrifixation. In 57 childbirths after ventrifixation, delivery proceeded normally in 51. The forceps had to be used in only 5 cases. In 49 of the cases the fixation had been done in connection with other interventions. In 2 there was recurrence of the retroflexion. Out of 41 births after vaginifixation there was no disturbance whatever in 39 cases. In 4 the forceps had to be used at the pelvic outlet. The retroflexion recurred in one instance only. The fixation was done by two silk threads a little below the middle of the space between the insertion of the tube and the peritoneal attachment. The threads were removed two weeks later. Abortion occurred in 7 cases after vaginifixation. These results justify the assumption, he thinks, that a carefully performed fixation does not entail future interference with childbirth.

91. **Alexander-Adams Operation.**—Out of 60 cases—the details of which are tabulated—recurrence was noted in 4.4 per cent. Four childbirths occurred in the total material; they proceeded normally with the exception of 2 cases in which there were pains from the traction.

Münchener medicinische Wochenschrift.

92 (LI, No. 16.) Der Petrol-Ether-Extrakt des Blutes normaler und immunisierter Tiere (blood of animals). M. Hahn.
93 *Eine einfache Methode zur forensischen Unterscheidung von Menschen- und Säugetier-Blut. H. Marx and E. Ehrenrooth (Berlin).
94 *Ueber den Wert der Blutdruckmessung mittels des Sphygmomanometers von Riva-Rocci und seiner Kombination mit Kontroll-Apparaten. T. Groedel and F. Kisch.
95 Die Temperatur und Sekretion des Magens bei einer Frau mit Magen-Fistel (stomach fistula). G. Galli (Baccelli's clinic, Rome).
96 Success of Pressure Bandage in 3 Cases of Detachment of Retina. E. Asmus.—Zur Frage des "Druckverbandes" bei Netzhautablösung.
97 Ueber traumatische Epithel-Cysten (Epidermoide). Max M. Klar. One case with bibliography.
98 Practical Significance of Valsalva's Experiment. M. Neu.—Zur praktischen Bedeutung des "Valsalvaschen Versuches."
99 *Zur Kasuistik der Lysol-Vergiftung. F. Fries.
100 *Typhoid Gloves. Georgii (Maulbronn).—Typhushandschuhe.
101 Ueber die neuen Liese Instrumente. O. Seitz.
102 Beruht die Wirkung der fluoreszierenden Stoffe auf Sensibilisierung? H. v. Tappeiner. See abstract 64, page 68.
103 *Die Bekämpfung der Wurmkrankheit (Ankylostomiasis) im rheinischwestfälischen Ruhrkohlenbezirk. H. Bruns. (Commenced in No. 15.)

93. **Simple Medicolegal Blood Test.**—In the issue for March 19 THE JOURNAL described the simple test for differentiation of human and animal blood proposed by Marx and Ehrnrooth. It is merely the agglutination which follows when a foreign serum is added to a concentrated solution of human blood. In this second communication they assert that dried blood from a mammal exerts the liveliest possible agglutinating action and hemolysis on human blood corpuscles even after three years. The great advantage of this method of differentiating is that minimal amounts of blood are sufficient. The blood is dissolved on an object glass with a drop or so of .6 per cent. salt solution to make a very concentrated solution, a blackish, brownish red. It may be necessary to extract the blood to have the solution concentrated enough. They stir into this an equal amount of human blood serum, the blood drawn the day before into a test tube of about 2 c.c. capacity and mixed with .6 per cent. salt solution to a strength of about 20 to 25 per cent. of the blood. A drop of the serum that accumulates above is added to the blood solution to be tested. The diagnosis will be easily determined from the absence or presence of agglutination. If

there is no agglutination the blood is certainly derived from a human subject or monkey. If agglutination occurs tempestuously at once with cytolysis and formation of stroma fibrin, the blood is certainly derived from an animal. If the blood to be tested is less than a month old and no agglutination occurs it is positively human blood. If agglutination occurs without distinct cytolysis there is a possibility that it may be human blood, and they describe a modification of the technic to be used in this case. The reaction is most distinct at room temperature and is decisive only in the first fifteen minutes. Fresh homologous serum is liable to induce coin-roll formation, but this has nothing to do with agglutination.

94. **Value of New Instruments for Determining the Blood Pressure.**—Comparative tests of various instruments did not reveal any superiority over the usual modes of testing with the finger. Even the finer gradations of pressure were estimated with the finger as accurately as with the instruments. The finger wearies but so does the eye in reading the findings.

99. **Lysol Poisoning.**—A young woman drank 25 to 30 gm. of pure lysol with suicidal intent. The drug caused a violent hemorrhagic nephritis with severe uremia. Recovery by the end of third week.

100. **Protecting Gloves for Nurses and Physicians in Typhoid, Etc.**—Georgii expresses his astonishment that nurses and physicians have not long ago adopted the practice of wearing gloves in handling typhoid and other infectious patients. The reason has probably been the lack of appropriate gloves for the purpose, those used by surgeons being too expensive and fragile. He has sought to remedy this by having gloves made of a soft, thin waterproof cloth ("paragummistoff"), which are supplied by the Sanitätsgeschäft Emilie Bürk, Stuttgart, Poststr. 6, for 98 cents a pair for the long gloves reaching to the elbow. They are made large so as to slip on and off easily and are fastened by an elastic band near the elbow and wrist. He has found these gloves indispensable for nurses, to be used when making the bed, lifting the patient, cleaning after soiling, etc. A cheaper, shorter glove is used for other services. For physicians he advocates these gloves or the kind used by chemists. The latter cost a little more but will be found very convenient and safe. He now uses them all the time in post-mortem work, in changing dressings, incising a panaritium, phlegmon, etc.; in short, whenever it is possible to dispense with the finer sense of touch. They deprive the examination of typhoid urine and feces, and contact with the patient of all danger. These chemists' gloves are much more durable than surgeons' gloves, and will stand boiling and disinfection and do not require any special care to keep them in good order. He thinks that they have solved the problem of the glove for the general practitioner, and that the waterproof stuff gloves mentioned above should be provided for the nurses in every typhoid case at least. His nurses never liked ordinary rubber gloves, but they are enthusiastic over the new, light, waterproof cloth gloves, saying that they scarcely interfere at all with the sense of touch or the use of the fingers. Even if they do not prove absolutely germ free, they at least protect the hands and arms against the most dangerous contamination.

103. **Campaign Against Ankylostomiasis in Westphalia.**—Bruns reports from the Institute for Hygiene at Gelsenkirchen that the number of miners found infested with these parasites has dropped from 13,621 to 3,663 in the last nine months in the 86 mines employing 70,000 men tributary to the Institute. The campaign of prophylaxis was based on the microscopic findings which enables the foci to be discovered and limited. All attempts to disinfect the mines were practically abandoned. The public was instructed in the nature of the affection by pamphlets, lectures, pictures and photographs, and extensive and convenient model sanitary baths and closets were supplied above ground, with receptacles for stools in profusion through the mines. The best results were obtained when the infested men were taken into barracks devoted exclusively to this class of cases. A single course of treatment with male fern was successful in expelling the parasites in all but 15 to 30 per cent. of the cases. Evil effects from use of the fern were observed in only 4 instances and in only one of these was the mishap directly traceable to the medicine. This is so small a proportion in the total of 20,000 courses of treatment that he does not think the fear of accidents from this cause should deter from its use. In conclusion he states that the results obtained far surpass those reported from any other country, and that the hygienic and sanitary measures adopted can not fail to have a marked benefit on the general health of the miners besides freeing the mines from ankylostomiasis. The latter is probably only a question of time.

Therapie der Gegenwart, Berlin.

Last indexed page 1327.

104 (XLV, No. 4.) *Ueber Veronal. Emil Fischer and J. v. Mering.
105 Ueber den respiratorischen Stoffwechsel bei der chronischen Lungen-Tuberkulose. H. Winternitz.
106 *Klinische Erfahrungen über die Digitalis-Dialysate. A. Doebert.
107 *Ueber eine neue Applikation-Methode von Collargol (Collargol-Klysmen). H. Loebl.
108 Die therapeutische Verwendung der subkutanen Iodipin-Injektionen bei rheumatoiden Gelenksentzündungen (arthritis). Schuster.
109 Ueber die Expektoration befördernde Wirkung des konstanten Stromes (uninterrupted current). L. Stembo.
110 *Zur Therapie des harten Schankers. L. Caro (Berlin).
111 Ueber hartnäckige Blasenkatarrhe (cystites rebelles). Imbert and G. Berg.
112 Akute parenchymatose Hepatitis geheilt durch Quecksilber. L. Lipmann. Ibid., G. Klemperer.
113 Value of Adhesive Plaster Bandages in Enteroptosis. W. N. Clemm.—Ueber die Bedeutung der Heftpflasterverbände für die Behandlung schlaffer und gesenkter Eingeweide.
114 Der neue Sauerstoff Chloroform-Tropf-Apparat und seine Vorzüge (advantages of oxygen-chloroform drop apparatus). Fränkel (Berlin).
115 Theocin (Theophyllin). Editorial.

104. **Veronal.**—Fischer and von Mering report that veronal passes unaltered through the body. It is best given in a cup of hot tea, as this disguises the slightly bitter taste and it dissolves readily in water.

106. **Dialysate of Digitalis.**—Doebert is convinced that many of the by-effects attributed to digitalis are in reality due to impurities, etc. All these are avoided by the dialysate, which is an invariably constant and regular preparation.

107. **Value of Collargol Per Rectum.**—Loebl considers himself justified in proclaiming from his experience with 29 cases that the application of collargol in rectal enemata is absolutely as effectual in cases of sepsis and puerperal processes as by inunctions with unguentum Credé or by intravenous injection of the collargol. Surprisingly good results were obtained in a number of cases, even after the development of associated joint affections and phlegmasia alba. The rectal route is less annoying to the patient while the drug is brought in contact with a better absorbing surface than in inunctions, and larger amounts can be used. No by-effects were observed, and he believes it highly probably that by these rectal injections of collargol it may be possible to save some patients otherwise irremediably lost. They displayed the greatest efficacy in acute septic affections and no appreciable benefit was derived in the subacute and chronic. The article issues from Schlesinger's clinic at Vienna, and the mode of administration was by injection per anum of one-half of a mixture of 1 gm. collargol in 100 gm. water, morning and evening. The collargol clysmata were kept up for eight to fourteen days. Stains on the linen were removed with a sublimate-saline solution or with Javelle water.

110. **Superheated Air in Treatment of Hard Chancre.**—Caro has been treating the primary syphilitic manifestation with superheated air, which Holländer has been extolling since 1898. The superheated air can be applied conveniently to the primary sore wherever it is located. The specific chancre loses its infectious character and the treatment has a marked attenuating or abortive effect on the disease in general. When secondary manifestations appeared they have always been extremely mild. They can be predicted from the behavior of the chancre under the hot air. If it persists the same size and still hard, then the infection is already systemic and secondary manifestations may be anticipated. It is surely better to treat cases on suspicion without waiting for absolute certainty, as the intervention is thus sure to be in time, and the procedure is so innocent and simple that it does no harm in any event, and requires no skill on the part of the physician.

Wiener klinische Rundschau, Vienna.

Last indexed page 277.

116 (XVII, Nos. 47 to 49.) Zur radiographischen Anatomie und Klinik des traumatischen intramuskulären Osteoms. R. Kienböck.
117 *Ueber die Torsion des grossen Netzes (of great omentum). F. Rudolf. (Concluded.)
118 Ueber ein zweckmässiges Instrument zur Entfernung adenoider Vegetationen. M. Depangher (Trieste).
119 Central Deafness in Typhoid. P. Krause.—Bemerkenswerter Fall von Typhus abdominalis mit zentral bedingter Schwerhörigkeit.
120 *Treatment of Freezing with Superheated Dry Air. M. von Statzer.—Behandlung von Erfrierungen mit überhitzter trockener Luft.
121 History of Medicine in Russia. M. Lachtin.—Ueber die Vergangenheit der russischen Medizin.
122 (No. 51.) *Cancer in Cicatrices. H. Mohr.—Das Narbenkarzinom.
123 Die bakteriologische Typhus-Diagnose. E. Gebauer. (Concluded).
124 (No. 52.) 2 Fälle von congenitalem Kehlkopf-Diaphragma (of larynx). J. Fein.
125 (XVIII, No. 1.) *Zur Syphilis der Trachea und der Bronchien. J. Neumann.
126 Zur hemorrhagischen Pankreatitis. E. Haim.
127 (No. 2.) *Foreign Bodies in Middle Ear. F. Alt.—Fremdkörper im Mittelohr.
128 Origin of Races. R. v. Wettstein.—Entstehung der Rassen. (Concluded.)
129 (No. 3.) Gastro-Enterostomia ypsiliformis (Y) antecolica anterior. J. Rotgans (Amsterdam). (Commenced in No. 2.)
130 (No. 4.) Zur Symptomatologie centraler und periferer Beinlähmung (paralysis of legs). E. Storch.
131 Crimes Against Property in Persecution Delusions. E. Bischoff.—Ueber Eigentumsdelikte bei Verfolgungswahn. (Commenced in No. 3.)
132 (Nos. 5 6.) *Ueber puerperale Gangrän der Extremitäten. E. Wörmser (Basle).
133 (No. 7.) *Zur Aetiologie und Behandlung der Neurasthenie. L. Höflmayr.
134 (No. 8.) Zur Trachom-Frage in Böhmen (Bohemia.) A. Hala.
135 Eye and Ear; Resemblances and Mutual Relations. R. Spira (Cracow).—Auge und Ohr. ihre Aehnlichkeiten und ihre wechselseitige Verhältnisse. (Commenced in No. 3.)
136 (Nos. 9-11.) Zur Pathologie der ileocöcalen Tuberkulose. (Tumor ileocoecalis tuberculosus.) D. Epstein (Kiev).
137 *Ueber Hypophysis-Tumoren. E. Zak.
138 Transitorische postparoxysmale Paraplegie bei Epileptikern. A. Heveroch.
139 (No. 12.) Treatment of Malignant New Growths in Body Cavities with Secondary Rays. G. Kaiser (Vienna).—Behandlung maligner Neubildungen in Körperhöhlen mit Sekundärstrahlen.
140 (No. 13.) Frenkel's Gymnastic Training of Tabetics. R. Hatschek.—Ueber die Ausführung der Frenkel'schen Uebungsbehandlung. (Commenced in No. 11.)

117. **Torsion of Great Omentum.**—The diagnosis of torsion of the great omentum is suggested when an old and always easily reduced hernia suddenly becomes irreducible, especially when this occurs after exertion and is followed by pains in the lower abdomen on the same side, and palpation reveals a hard, circumscribed and painful tumor out of which the pedicle of the hernia seems to issue and which reaches up to or beyond the umbilicus, while there are little, if any, symptoms on the part of the abdominal tract. The prognosis is good. The 5 cases of intrahernial torsion of the omentum all recovered. Fourteen of the 17 cases of intra-abdominal torsion operated on during the first six days recovered and 3 of the 4 operated on later, that is, a total of 17 recoveries in 21 cases. The proper treatment is a hernio-laparotomy excising the omentum into sound tissue after separating adhesions, with radical operation of the hernia. In conclusion Rudolf describes a case not included in the above in which the intrahernial twisted omentum simulated a malignant tumor in a testicle. The patient was a man of 36, with retained testicle, at which point a tumor had developed consecutive to repeated traumatism. The diagnosis of sarcoma was based on the smooth surface and leathery consistence of the tumor, as well as the impossibility to discover the testis by palpation. He was able to make a positive diagnosis in another and a presumptive in a third case. The total number on record is 29, in 23 of which the torsion of the omentum was intra-abdominal, with 19 recoveries after surgical intervention, a total of 24 recoveries.

120. **Superheated Air in Treatment of Freezing and Chilblains.**—Statzer relates that surprising success has crowned his application of superheated air to the treatment of frozen tissues and of chilblains. He has thus treated 16 patients. In 6 only a day or two had elapsed since the freezing; in 6 about a week, and in the others two or three months. From two to four applications were generally necessary to a maximum of ten applications of the hot-air box. The sittings were an hour each daily or half to three-quarters of an hour twice a day. The simplicity and ease of this method of treatment, its unvarying success and the short interval before the signs of inflammation subsided and clean granulations took the place of the gangrenous ulcer, far surpassed any results obtained with other methods. The discomforts of chilblains rapidly subside. The application of the hot-air box soon after a part has been frozen will restore conditions to normal and prevent the tardy lesions sometimes observed.

122. **Cancer in Cicatrices.**—Mohr enumerates a number of instances to show the predilection of cancer for scars left from old lesions. Treatment should be preventive. Scars should be scrupulously protected against all irritation, especially in elderly subjects. The same as in case of warts and nevi a scar should be promptly excised at the slightest initial manifestation of cancerous transformation. If there is already ulcerative breaking down of the scar tissue no irritating treatment should be allowed, especially no caustics.

125. **Syphilis of Trachea and Bronchi.**—Neumann has previously related the history of 4 cases of syphilitic stenosis of the trachea and here describes another in which there was multiple stenosis in both trachea and bronchi, accompanied by gummata in the skull, clavicle and skin, gummatous processes in the trachea and bronchi, pulmonary emphysema, kyphoscoliosis and chloro-anemia. An effort was made to dilate the trachea with permanent tubes, which von Schrötter has successfully used in 2 cases, but with little results in this one. No attempt was made to excise the crossbars of tissue in the trachea and bronchi both on account of their inaccessibility and of the liability that they would grow again at once. The patient left the clinic somewhat improved under potassium iodid, breathing easier.

127. **Foreign Bodies in Middle Ear.**—Alt never proceeds to instrumental extraction of a foreign body in the middle ear until the subject has been narcotized. In 2 cases he found it necessary to make an incision behind the ear to obtain access to the meatus and extract the foreign body.

132. **Puerperal Gangrene of the Extremities.**—Wörmser has been able to find 80 cases of puerperal gangrene in the literature, in 58 of which the gangrene developed in the legs during childbed, while in 8 it was postpartum; in 7 there were signs of necrosis even during the pregnancy, and in the remaining 7 Raynaud's disease developed before or after childbirth. Infection during or soon after delivery seems to have been the cause of the gangrene in childbed. Whether due to thrombophlebitis, endarteritis or embolism there was always preceding puerperal infection. Raynaud's disease bears only a casual connection with the pregnancy in all probability, as also the occurrence of gangrene in the course of gestation. The 58 cases in which gangrene of the legs during childbed was observed prove that this is not so rare as generally supposed. (There are only 42 cases on record in which gangrene of the legs was observed in spotted typhus.) The age has little influence, as the patients were from 17 to 40 years old. In 17 instances the patients were primiparæ, and more than six births had occurred in only 8. In 4 of the 42 cases in which these details were mentioned there had been premature delivery or abortion. The affection can always be traced to some obstruction in the arterial or venous system or both.

133. **Treatment of Neurasthenia.**—Höflmayr classes cases of neurasthenia as those in which circulatory and those in which digestive disturbances predominate. In the first class electric and hydrotherapeutic measures divert the blood into the capillaries, and thus the arteries in the brain and the large vessels are relieved and the heart energy increased. The vessel walls regain their tonicity, and with this the entire musculature feels the benefit, thus banishing the former lassitude and insomnia. Faradism or galvanism is applied to the neck with 3 to 5 milliamperes for eight to ten minutes with tepid half baths for three or four minutes with friction by an attendant. The bath is taken in the morning, after a light meal, and is followed by a brisk half-hour walk. The meals should be small and frequent, with an hour's exercise toward evening and eight hours' sleep. The second class is treated with a stronger current, applied to the abdomen, with coo'

packs to the abdomen and brief applications of a cold towel to the abdomen as the patient gets out of a warm bed. No restriction need be placed on the diet except small and frequent meals, and no excess of fluids. Very cold or very hot baths should be avoided in both classes, including prolonged sun baths or electric light baths.

137. **Tumors of the Hypophysis.**—Zak's interest in this subject was aroused by 2 cases that came under his observation, distinguished by the absence of any tendency to acromegaly. In both there was destruction of the hypophysis proper, and he tabulates 25 similar cases from the records. He points out that hyperfunction of the hypophysis seems to induce acromegaly while the disturbances with hypofunction are apparently directly the reverse. He admits, however, that we are not certain as yet as to which elements of the hypophysis are the true functioning ones.

Hospitalstidende, Copenhagen.

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141 (XLVI, No. 49.) *Case of Congenital Morphinism. F. Lützhöft.—Et Tilfaelde af medfodt Morfinisme.
142 Intermittent Albuminuria in Children. T. Frölich. Abstract.
143 (No. 50.) *Addison's Disease from Cirrhosis of Suprarenals. H. Munch-Petersen.—Morbus Addisonii, betinget af Binyrecirrhose, og denne specielle Forms kliniske Forlob. (Commenced in No. 48.)
144 Influence of Age on Susceptibility to Vaccination. T. Jantzen. Alderens Indflydelse paa Barnets Modtagelighed for Vakcine.
145 (No. 51.) Polyposis intestini crassi. S. Zahlmann.
146 Behavior of Catgut Introduced Into Anterior Chamber. C. F. Heerfordt.—Undersogelse over Catgut, indbragt i forreste Ojekammer. 1. Indledning.—Om forreste Ojekammers Brugbarhed til Catgutstudier.
147 (No. 52.) En Modifikation af Forsell's Metode til Paavisning af Tuberkel-Baciller i Urin. F. Gregersen.
148 (XLVII, No. 1.) Transmission of Human Tuberculosis to Bovines. J. Fibiger and C. O. Jensen.—Overforelse af Mennesketub. til Kvaeget. See page 864, abstract 60.
149 (No. 2.) Influence of Serum Treatment on Mortality of Diphtheria. E. E. Faber.—Serumbehandlungens Indflydelse paa Difterimortaliteten.
150 (No. 3.) Mucus in Dejecta. C. Lorenyzen.—Om Undersogelse af Slim i Afforingen.
151 (No. 5.) Is Zona a Seasonal Affection? T. Jantzen.—Er zona en Saesonssygdom?
152 Dangers from Bovine Tuberculosis for Man. J. Fibiger and Bang. From society report. (Commenced in No. 4.)
153 (No. 6.) Twin Births with Interval of 17 Days. J. Paulin. En Tvillingsfodsel med 17 Dages Pause.
154 Action of Light on Bacteria. V. Bie.—Om Lysets Virking paa Bakterier. Abstract.
155 (No. 7.) Kloroform eller Eter? T. Robsing.
156 Valve Syringe. C. Engelbreth. Described XLI, page 890.
157 (No. 8.) *Cancer in Greenland. A. Bertelsen.—Om Forekomsten af Cancer i Gronland.
158 Traumatiske Psykoser. Friedenreich. (Commenced in No. 4.) 30 cases.
159 (No. 9.) *Om Ovarie-Svulsters Malignitet. E. Müller.
160 Om primaer Eter-Narkose ved Tand-Operationer (in dentistry.) P. K. Faber.
161 (No. 10.) Et Tilfaelde af Lien dislocatus. C. Elle.
162 Surgery of the Stomach. A. Madsen.—Om ventrikelkirurgi. From detailed society report.

141. **Congenital Morphinism.**—An otherwise healthy girl babe was born to a woman of 36, who had for more than three years averaged 10 cg. of morphin a day, increased to 25 cg. during her pregnancy. The child was restless, and cried constantly, its face showing constant distress and agitation, its arms constantly waving. A swallowing sound in the throat was frequently heard, with attacks resembling spasm of the glottis. Food was taken readily, but vomited at once, and sleep was broken every ten minutes. Half a drop of tincture of opium was then added to 60 gm. of milk and given by gavage and retained. By this means it was possible to quiet the child, and it began to thrive under a brief course of minute doses of opium. It is now a well-developed and intelligent child.

143. **Addison's Disease from Cirrhosis of Suprarenals.**—Munch-Petersen reviews the details of a case personally observed and of 26 he has collected in the literature. The principal features by which atrophy of the suprarenals may be differentiated are the early age and the protracted course of the disease; the alternation of periods of comparative health; the intensity of the terminal attack, suggesting an acute intoxication; the early development of the cutaneous pigmentation; the afebrile course with occasional rises of temperature during exacerbations; the absence of any indications of tuberculosis and also the lack of any palpable tumor below the costal arch and of metastases. In the personal case reported the absence of free HCl suggested gastritis, which was confirmed by the findings later. The age of the patients ranged from 20 to 50 in all but 4 instances and in these the affection had commenced under 10 in 1; under 20 in 2, and at 53 in the other. The duration of the disease was from one to twenty-two years. His own patient was a woman of 44, previously healthy; she died nine months after the first symptoms had been noted. A number of senile changes were noticed in this, as well as in some of the other cases on record, notwithstanding that only one of the patients was over 50.

157. **Cancer in Greenland.**—Bertelsen reports the first case of microscopically diagnosed cancer in Greenland. He has seen 2 others, of whose nature he has no doubt, out of an experience with 950 patients with various affections.

159. **Malignity of Ovarian Tumors.**—Müller urges the immediate removal of all ovarian tumors as soon as diagnosed. In his experience he found the tumor a cyst in 9 out of 47 cases, a cystadenoma in 26, carcinoma in 6 and myosarcoma in 1, with 5 embryomata.

Hygiea, Stockholm.

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163 (LXVII, No. 1.) Om difteri- och pseudodifteri-bacillens förhallande till Pfeiffer's specifika immunitets-reaktion. J. Almkvist.
164 Ett fall af myotonia congenita. J. A. Andersson.
165 Cutaneous Reflexes. H. Munch-Petersen.—Hudreflexerne og deres Nervebaner. Abstract.
166 (No. 2.) Development of the Knee. C. M. Fürst.—Nagra bidrag till knäledens utvecklingshistoria.
167 Twenty five Cases of Hereditary Polydactylia in One Family. E. S. Nylander.—Om ärftlig polydaktyli.
168 En studie i perkussion af lungorna. C. E. Waller.
169 Gonokokkodling pa Thalmann-agar. Al Alfven.
170 (No. 3.) Om utvidgning af cervix uteri medelst metall-dilatatorium vid förlossningar. O. Grönè.
171 Om akut central amblyopi. J. Holmström.
172 2 fall af ductus arteriosus Botalli persistens. O. Dalsjö.
173 *New Method of Sterilizing Milk. Budde. Abstract.

173. **Oxygen Method of Sterilizing Milk.**—Budde's method consists in the addition of about .05 per cent. of hydrogen peroxid to the cold milk, which is then rapidly heated to 52 C. (125 F.) in a covered vessel and kept at this temperature for eight to ten hours. Milk thus treated is effectually sterilized, while its taste is not impaired in the least, and none of its other properties seem to be affected in any way.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

ANNUAL REPORT OF THE BOARD OF MEDICAL EXAMINERS OF MARYLAND TO THE MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND, April 26, 1904. Paper. Pp. 31.

RHYTHMIC FLASHES. By John Mullin Batten, B.E., M.D., Late Acting Assistant Surgeon in the United States Navy. Cloth. Pp. 140. Published by the Author. 1904.

PROCEEDINGS OF THE TWENTY-NINTH ANNUAL MEETING OF THE NEW JERSEY SANITARY ASSOCIATION. Held Friday and Saturday, Dec. 4 and 5, 1903, in the Laurel House, Lakewood, N. J. Paper. Pp. 76. Trenton, N. J.: MacCrellish & Quigley. 1904.

CASE TECHNIC IN SURGERY. By Herbert L. Burrell, M.D., Professor of Clinical Surgery, Harvard University, and John Bapst Blake, M.D., Instructor in Surgery, Harvard University. Cloth. Pp. 152. Price, 75 cents. Philadelphia: P. Blakiston's Son & Co. 1904.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS for Students and Physicians. By John H. Musser, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Fifth Edition, Revised and Enlarged. Illustrated with 395 Wood Cuts and 63 Colored Plates. Cloth. Pp. 1213. Price, $6.50. Philadelphia and New York: Lea Brothers & Co. 1904.

ORTHMANN'S HANDBOOK OF GYNECOLOGICAL PATHOLOGY for Practitioners and Students. Translated by C. Hubert Roberts, M.D. Lond., F.R.C. Eng., M.R.C.P., Physician to the Samaritan Hospital, London. Assisted by Max L. Trechmann, F.R.C.S. Eng., M.B., C.M. Edin. Cloth. Pp. 127. Price, 5 shillings net. London: John Bale, Sons & Danielsson, Ltd. 1904.

ELEMENTS OF GENERAL RADIOTHERAPY FOR PRACTITIONERS. By Dr. Leopold Freund, Vienna. Translated by G. H. Lancashire, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., Assistant Physician to the Manchester and Salford Hospital for Skin Diseases. With 107 Illustrations in the Text and One Frontispiece. Cloth. Pp. 538-59. Price, $5.00. New York: Rebman Co. 1904.

MANUAL OF MATERIA MEDICA AND PHARMACY. Specially Designed for the Use of Practitioners and Medical, Pharmaceutical, Dental and Veterinary Students. By E. Stanton Muir, Ph.G., V.M.D. Instructor in Comparative Materia Medica and Pharmacy in the University of Pennsylvania. Third Edition, Revised and Enlarged. Cloth. Pp. 192. Price, $2.00 net. Philadelphia: F. A. Davis Company.